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(54) Title: METHOD FOR MANUFACTURING AND DISTRIBUTING WET WIPES

(57) Abstract:

METHOD FOR MANUFACTURING AND DISTRIBUTING WET WIPES

This application is a continuation in part of pending U.S. application entitled System and Dispenser for Dispensing Wet Wipes, Serial No. 09/565,227, attorney docket no. 659/648 filed May 4, 2000, which is a continuation in part of pending U.S. application entitled Dispenser For Premoistened Wipes, Serial No. 09/545,995, attorney docket no. 659/623, which was filed on April 10, 2000, the disclosures of which are hereby incorporated by reference.

FIELD OF THE INVENTION

This invention relates to the use of wet or premoistened products alone or in conjunction with other products or systems to dispense such products.

BACKGROUND OF THE INVENTION

Wet products such as wet wipes have many applications. They may be used with small children and infants when changing diapers, they may be used for household cleaning tasks, they may be used for cleaning hands, they may be used as a bath tissue, they may be used as by a caregiver to clean a disabled or incontinent adult, or they may be used in and for a whole host of other applications, where it is advantages to have a wipe or towel that has some wetness or moisture in it.

Wet wipes have been traditionally dispensed in sheet form from a tub like container with a hinged lid on the top. The lid is opened and individual or singularized sheets of the wipes are removed. Another type of container that has been used for wet wipes provides a roll of wipes in which the wipes are pulled from the top of the container in a direction that is parallel to the axis of the roll. These wipes are pulled from the center of a hollow coreless roll that has perforated sheets. These containers generally have a snap top lid that is opened to expose a piece of the wipes that can then be pulled to remove the

desired amount of wipes. Once pulled out the wipes can then be torn off, usually at a perforation, and the lid closed.

Wet wipes can be any wipe, towel, tissue or sheet like product including natural fibers, synthetic fibers, synthetic material and combinations thereof, that is wet or moist or becomes wet during use or prior to use. Wet
5 wipes may be dispersible when in contact with water or may be non-dispersible. Examples of wet wipes are disclosed in application serial numbers 09/564,449; 09/564,213; 09/565,125; 09/564,837; 09/564,939; 09/564,531; 09/564,268; 09/564,424; 09/564,780; 09/564,212; 09/565,623 all
10 filed May 4, 2000, and application serial no. 09/223,999 entitled Ion-Sensitive Hard Water Dispersible Polymers And Applications Therefore, filed December 31, 1998 the disclosures of which are incorporated herein by reference. Embodiments of dispensers are described in application serial number _____ filed September 12, 2000, having lawyer docket number
15 659/691, the disclosure of which is incorporated herein by reference.

SUMMARY OF THE INVENTION

In an embodiment of the present invention there is provided a method for providing refills for a wet wipes dispenser comprising: obtaining a wet
20 wipes cartridge; determining the measurements of the obtained cartridge; determining the price of the obtained cartridge; manufacturing a cartridge based on the measurements of the obtained cartridge; putting a roll of wet wipes in the manufactured cartridge; and, determining a price for the manufactured cartridge that is less than or equal to the price of the obtained cartridge.

25 These embodiments may further comprise the methods wherein the price of the obtained cartridge is the retail price, the price of the manufactured cartridge is the retail price, advertising the price of the manufactured cartridge, the price of the manufactured cartridge is below the price of the obtained cartridge the price of the manufactured cartridge and the obtained cartridge
30 are retail prices, and/or providing instructions on how to refill a dispenser with the manufactured cartridge.

Refilling instructions could be in the form of diagrams or text on the package of wipes, or on a cartridge of wipes, or on the dispenser or the packaging used to sell or display the dispenser or the other components of the system. It could be in the form of package inserts with text or diagrams or both. The instruction need only show the user how to use the cartridge, or wipes in the dispensing system although other information may also be included.

In an embodiment of the present invention there is provided a method for providing refills for a wet wipes dispenser comprising: obtaining a wet wipes dispenser; determining the dimensions of the obtained dispenser; determining the price of a wet wipes cartridges offered for sale for use with the obtained dispenser; determining the size of a roll of wet wipes that would fit in the obtained dispenser; manufacturing a roll of wet wipes having the determined size; and, establishing a price for the manufactured roll that is less than or equal to the price of the cartridge.

These embodiments may further comprise the methods wherein the price of the obtained cartridge is the retail price, the price of the manufactured cartridge is the retail price, advertising the price of the manufactured cartridge, the price of the manufactured cartridge is below the price of the obtained cartridge the price of the manufactured cartridge and the obtained cartridge are retail prices, and/or providing instructions on how to refill a dispenser with the manufactured cartridge.

In an embodiment of the present invention there is provided a method for providing refills for a wet wipes dispenser comprising: obtaining a wet wipes cartridge that was manufactured by Kimberly-Clark; determining the measurements of a obtained cartridge; determining the price of the obtained cartridge; manufacturing a cartridge having similar dimensions to the obtained cartridge; providing a roll of wet wipes in the cartridge; and, pricing the manufactured cartridge at or below the price of the obtained cartridge.

These embodiments may further comprise the methods wherein the price of the obtained cartridge is the retail price, the price of the manufactured cartridge is the retail price, advertising the price of the manufactured cartridge,

the price of the manufactured cartridge is below the price of the obtained cartridge the price of the manufactured cartridge and the obtained cartridge are retail prices, and/or providing instructions on how to refill a dispenser with the manufactured cartridge.

5 In an embodiment of the present invention there is provided a method for providing refills for a wet wipes dispenser comprising: purchasing a wet wipes cartridge from a retail distribution source; determining the dimensions of the obtained cartridge; determining the price paid to purchase the obtained cartridge; manufacturing a cartridge based on the dimensions of the obtained
10 cartridge; providing a roll of wet wipes in the manufactured cartridge; establishing a price for the manufactured cartridge that is equal to or less than the price of the obtained cartridge, and, providing instruction to place the cartridge in a dispenser.

 In an embodiment of the present invention there is provided a method
15 for providing refills for a wet wipes dispenser comprising: obtaining a cartridge for a wet wipes dispenser; determining the dimensions of the cartridge; determining the retail price charged for the cartridge; determining that the cartridge is asymmetrical; determining that the cartridge has two protrusions on one side and one protrusion on the other; determining the dimensions of
20 the protrusions; determining the relative locations of the protrusions with respect to the dimensions of the cartridge; manufacturing a cartridge having substantially the same dimensions, protrusions, and placement of protrusions as the obtained cartridge; placing wet wipes in the manufactured cartridge; providing a bacterial resistant seal to the manufactured cartridge containing
25 the wet wipes; and, setting the price of the manufactured cartridge such that its retail price can be less than or equal to the retail price of the obtained cartridge.

 In an embodiment of the present invention there is provided a method for providing refills for a wet wipes dispenser comprising: obtaining a
30 Kimberly-Clark wet wipes cartridge; determining the measurements of the obtained cartridge; determining a price charged for the obtained cartridge; determining the dimensions of a cartridge that would be interchangeable with

the obtained cartridge; making a cartridge to the determined interchangeable dimensions; providing a roll of wet wipes in the interchangeable cartridge; providing instruction to place the interchangeable cartridge in a dispenser; and, setting the price of the interchangeable cartridge so that the price of the interchangeable cartridge can be less than or equal to the obtained cartridge.

These embodiments may further comprise the methods wherein the price of the obtained cartridge is the retail price, the price of the manufactured cartridge is the retail price, advertising the price of the manufactured cartridge, the price of the manufactured cartridge is below the price of the obtained cartridge the price of the manufactured cartridge and the obtained cartridge are retail prices, and/or providing instructions on how to refill a dispenser with the manufactured cartridge.

In an embodiment of the present invention there is provided a method for providing refills for a wet wipes dispenser comprising: obtaining a coreless roll of wet wipes; determining the measurements of a coreless roll of wet wipes; determining the retail price charged for the obtained roll; manufacturing a roll of wet wipes having similar dimensions to the obtained roll; sealing the manufactured roll of wet wipes in a bacteria resistant package; providing instruction to place the roll in a dispenser; and, setting the price of the manufactured roll so that the price of the manufactured roll is less than or equal to the retail price of the obtained roll.

In an embodiment of the present invention there is provided a method for providing refills for a wet wipes dispenser comprising: obtaining a wet wipes cartridge; determining the measurements of the obtained cartridge; determining the price of the obtained cartridge at a given retail outlet; providing wet wipes in a package, the provided package having measurements based on the measurements of the obtained cartridge; and, establishing a price for the provided package that is less than or equal to the price of the obtained cartridge at the given retail outlet.

These embodiments may further comprise the methods wherein the establishing a price comprises providing coupons to the consumer; providing free samples to the consumer; offering discounts to a buyer who is not the

consumer, wherein the buyer may be the retail outlet; providing funding for advertising of the package; and providing instructions on how to refill a dispenser with the package. The provided package may also contain fewer sheets of wipes than contained in the obtained cartridge.

5 DRAWINGS

Figure 1 is a perspective view of a dispenser.

Figure 2 is an exploded view of a dispenser and cartridge.

Figure 2a is a plan view of a portion of the front of the tray.

Figure 3 is a perspective view of an open dispenser.

10 Figure 4 is a top view of a dispenser.

Figure 5 is a front view of a dispenser.

Figure 6 is a bottom view of a dispenser.

Figure 7 is a side view of a dispenser.

Figure 8 is a back view of a dispenser.

15 Figure 9 is a cross section view of a dispenser and cartridge taken along line A-A of Figure 5.

Figure 10 is a cross section view along line D-D of Figure 9.

Figure 11 is a cross section view along line E-E of Figure 9.

Figure 12 is a cross section view along line F-F of Figure 9.

20 Figure 13 is a cross section view of a dispenser and cartridge taken along line C-C of Figure 5.

Figure 14 is a cross section view along line J-J of Figure 13.

Figure 15 is a cross section view along line K-K of Figure 13.

Figure 16 is a perspective view of a dispenser with a wet wipe.

25 Figure 17 is a perspective view of a dispenser, a cartridge and a roll of wet wipes.

Figure 18 is a perspective view of a roll of wet wipes

Figure 19 is a cross section view of a dispenser, a cartridge and a roll of wet wipes.

30 Figure 20 is a cross section view of a cartridge and a roll of premoistened wipes.

Figure 21 is a cross section view of a cartridge.

Figure 22 is a perspective view of the outside of a cover.

Figure 23 is a front view of the outside of a cover.

Figure 24 is a perspective view of the inside of a cover.

5 Figure 25 is a cross section view of a cover.

Figures 26-28 are views of a tray.

Figures 29-31 are views of a roller.

Figures 32-37 are views of a wiper assembly.

Figure 36 is a view along line A-A of Figure 35.

10 Figure 34 is a view along line A-A of Figure 32.

Figures 38-39 are views of a wiper.

Figures 40-41 are views of a roller.

Figures 42-45 are views of a mounting assembly.

15 Figures 46-50 are views of a screw used in conjunction with the mounting assembly.

Figures 51-53 are views of a cartridge.

Figure 54 is a top view of a package of cartridges.

Figure 55 is a perspective view of a dispenser.

Figure 56 is an exploded view of a dispenser and cartridge.

20 Figure 57 is a front plan view of a wiper assembly.

Figure 58 is a front plan view of a wiper assembly.

Figure 59 is a plan view of a wiper blade.

Figure 60 is a cross-sectional view of a wiper blade.

Figure 61 is a perspective view of a wiper blade.

25 Figure 62 is a cross-sectional view of a dispenser.

Figure 63 is a cross-sectional view of a portion of a dispenser.

Figure 64 is a perspective view of the inside of a cover.

Figure 65 is a top view of the inside of a cover.

Figure 66 is a view of a conventional bath tissue holder.

30 Figure 67 is a view of a conventional bath holder.

Figure 68 is a view of a mounting assembly in a conventional bath tissue holder (shown without the dispenser).

DETAILED DESCRIPTION OF PRESENTLY PREFERRED EMBODIMENTS OF THE INVENTION

A system and method for dispensing and providing wipes is provided, which in general may have a housing, a cover, and a cartridge having a roll of wet wipes. The cartridge is placed in the housing and then the wipes can be removed from the dispenser.

Individuals, such as by way of example, Competitors to the assignee, Kimberly-Clark, can obtain samples of the dispensing systems and cartridges and wet wipes rolls disclosed herein or similar systems that may be made by or for and sold by or for Kimberly-Clark. These samples may be obtained by purchasing the samples at a retail outlet or store that sells products to the general public. The price that is paid at such a store that services the general public is known as the retail price. Examples of such retail stores would be mass merchants such as Wal-Mart®, Walgreen's® and Target®, club stores such as Sam's Club® or Costco®, grocery stores such as Kroger® or Jewel®, or internet stores such as Amazon.com® or Webvan.com®. These obtained samples can then be analyzed, such as determining their measurements, dimensions, compositions and any other information about them that is desirable. From this information dispensers systems, cartridges and rolls can be developed and made that are similar to the obtained products. For example, a cartridge or container of wet wipes can be designed and made using the data or information obtained from the obtained samples to make a cartridge of wipes that fits into the dispenser that is ordinarily used with the obtained wipes. The data and information from the obtained product may be used, in whole or in part, to make such as a cartridge. For example, and with out limitation, only the overall shape and width and length may be used. Thus, the design and dimensions of a Kimberly-Clark product could be copied and used to make a product that is placed into the stream of commerce in competition with the Kimberly-Clark product.

An aspect to the replacement of a competing commercial product is the pricing of the replacement product. Price can be defined and described as

given in *Marketing Management* by Philip Kotler, the pertinent parts of which are reproduced below.

Traditionally, price has operated as the major determinant of buyer choice. This is still the case in poorer nations, among poorer groups, and with commodity-type products. Although non-price factors have become more important in buyer behavior in recent decades, price still remains one of the most important elements determining company market and profitability. Consumers and purchasing agents have more access to price information and price discounters. Consumers shop carefully, forcing retailers to lower their prices. Retailers put pressure on manufacturers to lower their prices. The result is a market characterized by heavy discounting and sales promotion.

Price is the marketing-mix element that produces revenue; the others produce costs. Price is also one of the most flexible elements. It can be changed quickly, unlike product features and channel commitments. At the same time, price competition is the number one problem facing companies. Yet many companies do not handle pricing well. The common mistakes are these: Pricing is too cost-oriented; price is not revised often enough to capitalize on market changes; price is set independent of the rest of the marketing mix rather than as an intrinsic element of market-positioning strategy; and price is not enough for different product items, market segments, and purchase occasions.

Companies handle pricing in a variety of ways. In small companies, prices are often set by the company's boss. In large companies, pricing is handled by division and product-line managers. Even here, top management sets general pricing objectives and policies and often approves the prices proposed by lower levels of management. In industries where pricing is a key factor (aerospace, railroads, oil companies), companies will often establish a pricing department to set or assist others in determining appropriate prices. This department reports to the marketing department, finance department, or top management. Others who exert an influence on pricing include sales managers, production managers, and accountants.

A firm must set a price for the first time when it develops a new product, when it introduces its regular product into a new distribution channel or geographical area, and where it enters bids on new contract work.

The firm must decide where to position its product on quality and price. In some markets, such as the auto market, as many as eight price points can be found.

There can be competition between price-quality segments. Some price-quality strategies can coexist in the same market. For example, one firm offers a high-quality product at a high price (A), another offers an average-quality product at an average price (B), and still another offers a low-quality product at a low price (C). All three competitors can coexist as long as the market consists of three groups of buyers: those who insist on quality, those who insist on price, and those who balance the two considerations.

Other strategies can attack these positions. Strategy D says, "Our product has the same high quality as product A but we charge less." Strategy E says the same thing and offers an even greater saving. If quality-sensitive customers believe these competitors, they will sensibly buy from them and save money (unless firm A's product has acquired snob appeal). Some strategies amount to overpricing the product in relation to its quality. In these cases the customers will feel "taken" and will probably complain or spread bad word of mouth about the company.

The firm has to consider many factors in setting its pricing policy. Consider a six-step procedure: (a) selecting the pricing objective; (b) determining demand; (c) estimating costs; (d) analyzing competitors' costs, prices, and offers; (e) selecting a pricing method; and (f) selecting the final price.

The company first decides where it wants to position its market offering. The clearer a firm's objectives, the easier it is to set price. A company can pursue any of five major objectives through pricing: survival, maximum current profit, maximum market share, maximum market skimming, or product-quality leadership.

Companies pursue survival as their major objective if they are plagued with overcapacity, intense competition, or changing consumer wants. Profits are less important than survival. As long as prices cover variable costs and some fixed costs, the company stays in business. However, survival is a short-run objective; in the long run, the firm must learn how to add value or face extinction.

Many companies try to set a price that will maximize current profits. They estimate the demand and costs associated with alternative prices and choose the price that produces maximum current profit, cash flow, or rate of return on investment. This strategy assumes that the firm has knowledge of its demand and cost functions. In reality, these are difficult to estimate. By emphasizing current financial performance, the company may sacrifice long-run performance by ignoring the effects of other marketing-mix variables, competitors' reactions, and legal restraints on price.

Some companies want to maximize their market share. They believe that a higher sales volume will lead to lower unit costs and higher long-run profit. They set the lowest price, assuming the market is price sensitive. They will build a large plant, set a price as low as possible, win a large market share, experience falling costs, and cut the price further as costs fall. The following conditions favor setting a low price: (a) The market is highly price sensitive, and a low price stimulates market growth; (b) production and distribution costs fall with accumulated production experience; and (c) a low price discourages actual and potential competition. On the other hand, many companies favor setting high prices to "skim" the market.

Nonprofit and public organizations may adopt other pricing objectives. A university aims for partial cost recovery, knowing that it must rely on private gifts and public grants to cover the remaining costs. A nonprofit hospital may aim for full cost recovery in its pricing. A nonprofit theater company may price its productions to fill the maximum number of theater seats. A social service agency may set a social price geared to the varying incomes of clients.

Whatever their specific objective, businesses that use price as a strategic tool will profit more than those who simply let costs or the market determine their pricing.

Each price will lead to a different level of demand and therefore have a different impact on a company's marketing objectives. The relation between alternative prices and the resulting current demand is captured in a demand curve. In the normal case, demand and price are inversely related: the higher the price, the lower the demand. In the case of prestige goods, the demand curve sometimes slopes upward. A perfume company raised its price and sold more perfume rather than less! Some consumers take the higher price to signify a better product. However, if too high a price is charged, the level of demand may fall.

The demand curve shows the market's probable purchase quantity at alternative prices. It sums the reactions of many individuals who have different price sensitivities. The first step in estimating demand is to understand what affects price sensitivity. Nagle has identified nine factors:

- a. Unique-value effect: Buyers are less price sensitive when the product is more distinctive.
- b. Substitute-awareness effect: Buyers are less price sensitive when they are less aware of substitutes.
- c. Difficult-comparison effect: Buyers are less price sensitive when they cannot easily compare the quality of substitutes.
- d. Total-expenditure effect: Buyers are less price sensitive the lower the expenditure is as a part of their total income.
- e. End-benefit effect: Buyers are less price sensitive the smaller the expenditure is to the total cost of the end product.
- f. Shared-cost effect: Buyers are less price sensitive when part of the cost is borne by another party.
- g. Sunk-investment effect: Buyers are less price sensitive when the product is used in conjunction with assets previously bought.
- h. Price-quality effect: Buyers are less price sensitive when the product is assumed to have more quality, prestige, or exclusiveness.

i. Inventory effect: Buyers are less price sensitive when they cannot store the product.

A number of forces, such as deregulation and the instant price comparison technology available over the Internet, have turned products into commodities in the eyes of consumers and increased their price sensitivity. Marketers need to work harder than ever to differentiate their offerings when a dozen competitors are selling virtually the same product at a comparable or lower price. More than ever, companies need to understand the price sensitivity of their customers and prospects and the trade-offs people are willing to make between price and product characteristics. In the words of marketing consultant Kevin Clancy, those who target only the price sensitive are "leaving money on the table." Even in the energy marketplace, where you would think that a kilowatt is a kilowatt is a kilowatt, some utility companies are beginning to wake up to this fact. They are buying power, branding it, marketing it, and providing unique services to customers.

Most companies make some attempt to measure their demand curves. They can use different methods.

The first involves statistically analyzing past prices, quantities sold, and other factors to estimate their relationships. The data can be longitudinal (over time) or cross sectional (different locations at the same time). Building the appropriate model and fitting the data with the proper statistical techniques calls for considerable skill.

The second approach is to conduct price experiments. Bennett and Wilkinson systematically varied the prices of several products sold in a discount store and observed the results. An alternative approach is to charge different prices in similar territories to see how sales are affected.

The third approach is to ask buyers to state how many units they would buy at different proposed prices. But buyers might understate their purchase intentions at higher prices to discourage the company from setting higher prices.

In measuring the price-demand relationship, the market researcher must control for various factors that will influence demand. The competitor's

response will make a difference. Also, if the company changes other marketing-mix factors besides its price, the effect of the price change itself will be hard to isolate. Nagle has presented an excellent summary of the various methods for estimating price sensitivity and demand.

5 Marketers need to know how responsive, or elastic, demand would be to a change in price. For instance, a price increase from \$10 to \$15 may lead to a relatively small decline in demand from 150 to 133. On the other hand, the same price increase may lead to a substantial drop in demand from 150 to 50. If demand hardly changes with a small change in price, we say the
10 demand is inelastic. If demand changes considerably, demand is elastic.

 Demand is likely to be less elastic under the following conditions:
(a) There are few or no substitutes or competitors; (b) buyers do not readily notice the higher price; (c) buyers are slow to change their buying habits and search for lower prices; (d) buyers think the higher prices are justified by
15 quality differences, normal inflation, and so on. If demand is elastic, sellers will consider lowering the price. A lower price will produce more total revenue. This makes sense as long as the costs of producing and selling more units does not increase disproportionately.

 Price elasticity depends on the magnitude and direction of the
20 contemplated price change. It may be negligible with a small price change and substantial with a large price change. It may differ for a price cut versus a price increase. Finally, long-run price elasticity may differ from short-run elasticity. Buyers may continue to buy from their current supplier after a price increase, because they do not notice the increase, or the increase is small, or
25 they are distracted by other concerns, or they find choosing a new supplier takes time. But they may eventually switch suppliers. Here demand is more elastic in the long run than in the short run. Or the reverse may happen: Buyers drop a supplier after being notified of a price increase but return later. The distinction between short-run and long-run elasticity means that sellers
30 will not know the total effect of a price change until time passes.

 Demand sets a ceiling on the price the company can charge for its product. Costs set the floor. The company wants to charge a price that

covers its cost of producing, distributing, and selling the product, including a fair return for its effort and risk.

A company's costs take two forms, fixed and variable. Fixed costs (also known as overhead) are costs that do not vary with production or sales revenue. A company must pay bills each month for rent, heat, interest, salaries, and so on, regardless of output.

Variable costs vary directly with the level of production. For example, each hand calculator produced involves a cost of plastic, microprocessing chips, packaging, and the like. These costs tend to be constant per unit produced. They are called variable because their total varies with the number of units produced.

Total costs consist of the sum of the fixed and variable costs for any given level of production. Average cost is the cost per unit at that level of production; it is equal to total costs divided by production. Management wants to charge a price that will at least cover the total production costs at a given level of production.

To price intelligently, management needs to know how its costs vary with different levels of production. Take the case in which a company has built a fixed-size plant to produce 1,000 hand calculators a day. The cost per unit is high if few units are produced per day. As production approaches 1,000 units per day, average cost falls. The reason is that the fixed costs are spread over more units, with each one bearing a smaller fixed cost. Average cost increases after 1,000 units, because the plant becomes inefficient: Workers have to queue for machines, machines break down more often, and workers get in each other's way.

If this same company believes that it could sell 2,000 units per day, it should consider building a larger plant. The plant will use more efficient machinery and work arrangements, and the unit cost of producing 2,000 units per day will be less than the unit cost of producing 1,000 units per day. In fact, a 3,000-capacity plant would be even more efficient. But a 4,000-daily production plant would be less efficient because of increasing diseconomies of scale: There are too many workers to manage, and paperwork slows

things down. A 3,000-daily production plant is the optimal size to build, if demand is strong enough to support this level of production.

5 Suppose this company runs a plant that produces 3,000 hand calculators per day. As the company gains experience producing hand calculators, its methods improve. Workers learn shortcuts, materials flow more smoothly, procurement costs fall. The result is that average cost falls with accumulated production experience. Thus the average cost of producing the first 100,000 hand calculators is \$10 per calculator. When the company has produced the first 200,000 calculators, the average cost has fallen to \$9. 10 After its accumulated production experience doubles again to 400,000, the average cost is \$8. This decline in the average cost with accumulated production experience is called the experience curve or learning curve.

Now suppose three firms compete in this industry, A, B, and C. A is the lowest-cost producer at \$8, having produced 400,000 units in the past. If 15 all three firms sell the calculator for \$10, A makes \$2 profit per unit, B makes \$1 per unit, and C breaks even. The smart move for A would be to lower its price to \$9. This will drive C out the market, and even B will consider leaving. A will pick up the business that could have gone to C (and possibly B). Furthermore, price-sensitive customers will enter the market at the lower 20 price. As production increases beyond 400,000 units, A's costs will drop still further and faster and more than restore its profits, even at a price of \$9. A may use this aggressive pricing strategy repeatedly to gain market share and drive others out of the industry.

25 Experience-curve pricing nevertheless carries major risks. Aggressive pricing might give the product a cheap image. The strategy also assumes that the competitors are weak and not willing to fight. Finally, the strategy leads the company into building more plants to meet demand while a competitor innovates a lower-cost technology and obtains lower costs than the market leader, who is now stuck with the old technology.

30 Most experience-curve pricing has focused on manufacturing costs. But all costs, including marketing costs, are subject to learning improvements. If three firms are each investing a large sum of money trying telemarketing,

the firm that has used it the longest might achieve the lowest telemarketing costs. This firm can charge a little less for its product and still earn the same return, all other costs being equal.

5 Today's companies try to adapt their offers and terms to different buyers. Thus a manufacturer will negotiate different terms with different retail chains. One retailer may want daily delivery (to keep stock lower) while another retailer may accept twice-a-week delivery in order to get a lower price. As a result, the manufacturer's costs will differ with each chain, and its profits will differ. To estimate the real profitability of dealing with different
10 retailers, the manufacturer needs to use activity-based cost (ABC) accounting instead of standard cost accounting.

ABC accounting tries to identify the real costs associated with serving different customers. Both the variable costs and the overhead costs must be tagged back to each customer. Companies that fail to measure their costs
15 correctly are not measuring their profit correctly. They are likely to misallocate their marketing effort. Identifying the true costs arising in a customer relationship also enables a company to explain its charges better to the customer.

We have seen that costs change with production scale and experience.
20 They can also change as a result of a concentrated effort by the company's designers, engineers, and purchasing agents to reduce them. Some companies use a method called target costing. They use market research to establish a new product's desired functions. Then they determine the price at which the product will sell given its appeal and competitors' prices. They
25 deduct the desired profit margin from this price, and this leaves the target cost they must achieve. They then examine each cost element - design, engineering, manufacturing, sales - and break them down into further components. They consider ways to reengineer components, eliminate functions, and bring down supplier costs. The objective is to bring the final
30 cost projections into the target cost range. If they can't succeed, they may decide against developing the product because it couldn't sell for the target

price and make the target profit. When they can succeed, profits are likely to follow.

Within the range of possible prices determined by market demand and company costs, the firm must take the competitors' costs, prices, and possible price reactions into account. If the firm's offer is similar to a major competitor's offer, then the firm will have to price close to the competitor or lose sales. If the firm's offer is inferior, the firm will not be able to charge more than the competitor. If the firm's offer is superior, the firm can charge more than the competitor. The firm must be aware, however, that competitors might change their prices in response.

Given the three Cs—the customers' demand schedule, the cost function, and competitors' prices—the company is now ready to select a price. Costs set a floor to the price. Competitors' prices and the price of substitutes provide an orienting point. Customers' assessment of unique product features establishes the ceiling price.

Companies select a pricing method that includes one or more of these three considerations. We will examine six price-setting methods: markup pricing, target-return pricing, perceived-value pricing, value pricing, going-rate pricing, and sealed-bid pricing.

The most elementary pricing method is to add a standard markup to the product's cost. Construction companies submit job bids by estimating the total project cost and adding a standard markup for profit. Lawyers and accountants typically price by adding a standard markup on their time and costs. Defense contractors charge their cost plus a standard markup.

Suppose a toaster manufacturer has the following costs and sales expectations:

Variable cost per unit	\$ 10
Fixed cost	300,000
Expected unit sales	50,000

The manufacturer's unit cost is given by:

$$\text{Unit cost} = \text{variable cost} + \frac{\text{fixed costs}}{\text{unit sales}} = \$10 + \frac{\$300,000}{50,000} = \$16$$

Now assume the manufacturer wants to earn a 20 percent markup on sales.

The manufacturer's markup price is given by:

$$\text{Markup price} = \frac{\text{unitcost}}{(1 - \text{desired return on sales})} = \frac{\$16}{1 - 0.2} = \$20$$

The manufacturer would charge dealers \$20 per toaster and make a profit of \$4 per unit. The dealers in turn will mark up the toaster. If dealers want to earn 50 percent on their selling price, they will mark up the toaster to \$40. This is equivalent to a cost markup of 100 percent.

Markups are generally higher on seasonal items (to cover the risk of not selling), specialty items, slower moving items, items with high storage and handling costs, and demand-inelastic items, such as prescription drugs. Unfortunately, those least able to pay for prescription drugs are often those most burdened by the markups: uninsured individual customers and the elderly on Medicare. In the case of prescription drugs, generic (non-brand-name) drugs command an extraordinarily high markup.

Does the use of standard markups make logical sense? Generally, no. Any pricing method that ignores current demand, perceived value, and competition is not likely to lead to the optimal price. Markup pricing works only if the marked-up price actually brings in the expected level of sales. Companies introducing a new product often price it high hoping to recover their costs as rapidly as possible. But a high-markup strategy could be fatal if a competitor is pricing low.

Still, markup pricing remains popular for a number of reasons. First, sellers can determine costs much more easily than they can estimate demand. By tying the price to cost, sellers simplify the pricing task. Second, where all firms in the industry use this pricing method, prices tend to be similar. Price competition is therefore minimized, which would not be the case

if firms paid attention to demand variations when they priced. Third, many people feel that cost-plus pricing is fairer to both buyers and sellers. Sellers do not take advantage of buyers when the latter's demand becomes acute, and sellers earn a fair return on investment.

5 In target-return pricing, the firm determines the price that would yield its target rate of return on investment (ROI). Target pricing is used by some automobile manufacturers, which price their automobiles to achieve a 15 to 20 percent ROI. This pricing method is also used by public utilities, which need to make a fair return on their investment.

10 Suppose the toaster manufacturer has invested \$1 million in the business and wants to set price to earn a 20 percent ROI, specifically \$200,000. The target-return price is given by the following formula:

$$15 \quad \text{Target-return price} = \frac{\text{unit cost} + \text{desired return} \times \text{invested capital}}{\text{unit sales}} = \$16 + \frac{.20 \times \$1,000,000}{50,000} = \$20$$

20 The manufacturer will realize this 20 percent ROI provided its costs and estimated sales turn out to be accurate. But what if sales do not reach 50,000 units? The manufacturer can prepare a break-even chart to learn what would happen at other sales levels. Fixed costs are \$300,000 regardless of sales volume. Variable costs, not shown in the figure, rise with volume. Total costs equal the sum of fixed costs and variable costs. The total revenue curve starts at zero and rises with each unit sold.

25 The total revenue and total cost curves cross at 30,000 units. This is the break-even volume. It can be verified by the following formula:

$$\text{Break-even volume} = \frac{\text{fixed cost}}{\text{price} - \text{variable cost}} = \frac{\$300,000}{\$20 - \$10} = 30,000$$

30 The manufacturer, of course, is hoping that the market will buy 50,000 units at \$20, in which case it earns \$200,000 on its \$1 million investment. But

much depends on price elasticity and competitors' prices. Unfortunately, target-return pricing tends to ignore these considerations. The manufacturer needs to consider different prices and estimate their probable impacts on sales volume and profits. The manufacturer should also search for ways to
5 lower its fixed or variable costs, because lower costs will decrease its required break-even volume.

An increasing number of companies base price on the customer's perceived value. They see the buyers' perceptions of value, not the seller's cost, as the key to pricing. They use the other marketing-mix elements, such
10 as advertising and sales force, to build up perceived value in buyers' minds.

The key to perceived-value pricing is to determine the market's perception of the offer's value accurately. Sellers with an inflated view of their offer's value will over price their product. Sellers with an underestimated view will charge less than they could. Market research is needed to establish the
15 market's perception of value as a guide to effective pricing.

In recent years, several companies have adopted value pricing, in which they charge a fairly low price for a high-quality offering. Value pricing says that the price should represent a high-value offer to consumers.

The computer industry has gone from seeking top dollar for computers
20 with the most technology to putting out computers with basic features for lower prices. Value pricing is not a matter of simply setting lower prices on one's products compared to competitors. It is a matter of reengineering the company's operations to become a low-cost producer without sacrificing quality, and lowering prices significantly to attract a large number of
25 value-conscious customers.

An important type of value pricing is everyday low pricing (EDLP), which takes place at the retail level. A retailer who holds to an EDLP pricing policy charges a constant, everyday low price with no temporary price discounts. These constant prices eliminate week-to-week price uncertainty
30 and can be contrasted to the "high-low" pricing of promotion-oriented competitors. In high-low pricing, the retailer charges higher prices on an

everyday basis but then runs frequent promotions in which prices are temporarily lowered below the EDLP level.

In recent years, high-low pricing has given way to EDLP at such widely different venues as car dealerships and upscale department stores. "It's not a short-term strategy," says one executive. "You have to be willing to make a commitment to it, and you have to be able to operate with lower ratios of expense than everybody else."

Retailers adopt EDLP for a number of reasons, the most important of which is that constant sales and promotions are costly and have eroded consumer confidence in the credibility of everyday shelf prices. Consumers also have less time and patience for such time-honored traditions as watching for supermarket specials and clipping coupons.

Yet, there is no denying that promotions create excitement and draw shoppers. For this reason, EDLP is not a guarantee of success. As supermarkets face heightened competition from their counterparts and from alternative channels, many find that the key to drawing shoppers is using a combination of high-low and everyday low pricing strategies, with increased advertising and promotions.

In going-rate pricing, the firm bases its price largely on competitors' prices. The firm might charge the same, more, or less than major competitor(s). In oligopolistic industries that sell a commodity such as steel, paper, or fertilizer, firms normally charge the same price. The smaller firms "follow the leader," changing their prices when the market leader's change rather than when their own demand or costs change. Some firms may charge a slight premium or slight discount, but they preserve the amount of difference. Thus minor gasoline retailers usually charge a few cents less per gallon than the major oil companies, without letting the difference increase or decrease.

Going-rate pricing is quite popular. Where costs are difficult to measure or competitive response is uncertain, firms feel that the going price represents a good solution. It is thought to reflect the industry's collective wisdom as to the price that will yield a fair return and not jeopardize industrial harmony.

Competitive-oriented pricing is common where firms submit sealed bids for jobs. The firm bases its price on expectations of how competitors will price rather than on a relation to the firm's costs or demand. The firm wants to win the contract, and winning normally requires submitting a lower price bid. At the same time, the firm not set its price below cost.

The net effect of these two opposite pulls can be described in terms of the bid's expected profit. Suppose a bid of \$9,500 would yield a high chance of getting the contract (say 81 percent) but only a low profit, say \$100. The expected profit is calculated by multiplying the company's profit by the probability of winning the bid. Thus the expected profit of this bid is \$81. If the firm bid \$11,000, its profit would be \$1,600, but its chance of getting the contract might be reduced, say to 1 percent. The expected profit would thus be only \$16. One logical bidding criterion would be to bid the price that would maximize the expected profit. The best bid would be \$10,000, for which the expected profit is \$216.

Using expected profit for setting price makes sense for the firm that makes many bids. In playing the odds, the firm will achieve maximum profits in the long run. The firm that bids only occasionally or that needs a particular contract badly will not find advantageous to use the expected-profit criterion. This criterion, for example, does not distinguish between a \$1,000 profit with a 0.10 probability and a \$125 profit with an 0.80 probability. Yet the firm that wants to keep production going would prefer second contract to the first.

Pricing methods narrow the range from which the company must select its final price. In selecting that price, the company must consider additional factors, including psychological pricing, the influence of other marketing-mix elements on price, company pricing policies, and the impact of price on other parties.

Many consumers use price as an indicator of quality. When Fleischmann raised the price of its gin from \$4.50 to \$5.50 a bottle, its liquor sales went up, not down. Image pricing is especially effective with ego-sensitive products such as perfumes and expensive cars. A \$100 bottle of

perfume might contain \$10 worth of scent, but gift givers pay \$100 to communicate their high regard for the receiver.

Price and quality perceptions of cars interact. Higher-priced cars are perceived to possess high quality. Higher-quality cars are likewise perceived to be higher priced than they actually are. When alternative information about true quality is available, price becomes a less significant indicator of quality. When this information is not available, price acts as a signal of quality.

When looking at a particular product, buyers carry in their minds a reference price formed by noticing current prices, past prices, or the buying context. Sellers often manipulate these reference prices. For example, a seller can situate its product among expensive products to imply that it belongs in the same class. Department stores will display women's apparel in separate departments differentiated by price; dresses found in the more expensive department are assumed to be of better quality. Reference-price thinking is also created by stating a high manufacturer's suggested price, or by indicating that the product was priced much higher originally, or by pointing to a competitor's high price.

Many sellers believe that prices should end in an odd number. Many customers see a stereo amplifier priced at \$299 instead of \$300 as a price in the \$200 range rather than \$300 range. Another explanation is that odd endings convey the notion of a discount or bargain. But if a company wants a high-price image instead of a low-price image, it should avoid the odd-ending tactic.

The final price must take into account the brand's quality and advertising relative to competition. Farris and Reibstein examined the relationships among relative price, relative quality, and relative advertising for 227 consumer businesses and found the following:

- Brands with average relative quality but high relative advertising budgets were able to charge premium prices. Consumers apparently were willing to pay higher prices for known products than for unknown products.

- Brands with high relative quality and high relative advertising obtained the highest prices. Conversely, brands with low quality and low advertising charged the lowest prices.
- The positive relationship between high prices and high advertising held most strongly in the later stages of the product life cycle for market leaders.

The price must be consistent with company pricing policies. Many companies set a pricing department to develop policies and establish or approve decisions. The aim is to ensure that the salespeople quote prices that are reasonable to customers and profitable to the company.

Management must also consider the reactions of other parties to the contemplated price. How will distributors and dealers feel about it? Will the sales force be willing to sell at that price? How will competitors react? Will suppliers raise their prices when they see the company's price? Will the government intervene and prevent this price from being charged?

In the last case, marketers need to know the laws regulating pricing. U.S. legislation states that sellers must set prices without talking to competitors: Price-fixing is illegal. Many federal and state statutes protect consumers against deceptive pricing practices. For example, it is illegal for a company to set artificially high "regular" prices, then announce a "sale" at prices close to previous everyday prices.

Companies usually do not set a single price but rather a pricing structure that reflects variations in geographical demand and costs, market-segment requirements, purchase timing, order levels, delivery frequency, guarantees, service contracts, and other factors. As a result of discounts, allowances, and promotional support, a company rarely realizes the same profit from each unit of a product that it sells. Here we will examine several price-adaptation strategies: geographical pricing, price discounts and allowances, promotional pricing, discriminatory pricing, and product-mix pricing.

Geographical pricing involves the company in deciding how to price its products to different customers in different locations and countries. For

example, should the company charge higher prices to distant customers to cover the higher shipping costs or a lower price to win additional business? Another issue is how to get paid. This issue is critical when buyers lack sufficient hard currency to pay for their purchases. Many buyers want to offer other items in payment, a practice known as countertrade. American companies are often forced to engage in countertrade if they want the business. Countertrade may account for 15 to 25 percent of world trade and takes several forms: barter, compensation deals, buyback agreements, and offset.

- 10 • Barter: The direct exchange of goods, with no money and no third party involved. A French clothing makers launched a five-year deal to barter \$25 million worth of U.S.-produced underwear and sportswear to customers in eastern Europe in exchange for a variety of goods and services, including global transportation and advertising space in eastern European magazines.
- 15 • Compensation deal: The seller receives some percentage of the payment in cash and the rest in products. A British aircraft manufacturer sold planes to Brazil for 70 percent cash and the rest in coffee.
- 20 • Buyback arrangement: The seller sells a plant, equipment, or technology to another country and agrees to accept as partial payment products manufactured with the supplied equipment. A U.S. chemical company built a plant for an Indian company and accepted partial payment in cash and the remainder in chemicals manufactured at the plant.
- 25 • Offset. The seller receives full payment in cash but agrees to spend a substantial amount of that money in that country within a stated time period. For example, a company sells its products to Russia for rubles and agrees to buy Russian vodka at a certain rate for sale in the United States.
- 30

Most companies will adjust their list price and give discounts and allowances for early payment, volume purchases, and off-season buying. Companies must do this carefully or find that their profits are much less than planned.

5 Jack Trout, author of *Positioning* and several other marketing guidebooks, cautions that some categories tend to self-destruct by always being on sale. Mink coats and mattresses, says Trout, never seem to be sold at anything near list price, and when automakers get rebate happy, the market just sits back and waits for a deal. Discount pricing has become the *modus operandi* of a surprising number of companies offering both products and
10 services.

 Cash Discounts: A cash discount is a price reduction to buyers who pay their bills promptly. A typical example is "2/10, net 30," which means that payment is due within 30 days and that the buyer can deduct 2 percent by
15 paying the bill within 10 days. Such discounts are customary in many industries.

 Quantity Discounts: A quantity discount is a price reduction to those buyers who buy large volumes. A typical example is "\$10 per unit for less than 100 units; \$9 per unit for 100 or more units." Quantity discounts must be
20 offered equally to all customers and must not exceed the cost savings to the seller associated with selling large quantities. They can be offered on a noncumulative basis (on each order placed) or a cumulative basis (on the number of units ordered over a given period).

 Functional Discounts: Functional discounts (also called trade
25 discounts) are offered by a manufacturer to trade-channel members if they will perform certain functions, such as selling, storing, and record keeping. Manufacturers may offer different functional discounts to different trade channels but must offer the same functional discounts within each channel.

 Seasonal Discounts: A seasonal discount is a price reduction to
30 buyers who buy merchandise or services out of season. Ski manufacturers will offer seasonal discounts to retailers in the spring and summer to

encourage early ordering. Hotels, motels, and airlines will offer seasonal discounts in slow selling periods.

Allowances: Allowances are extra payments designed to gain reseller participation in special programs. Trade-in allowances are price reductions granted for turning in an old item when buying a new one. Trade-in allowances are most common in durable-goods categories. Promotional allowances are payments or price reductions to reward dealers for participating in advertising and sales support programs.

Companies can use several pricing techniques to stimulate early purchase.

- Loss-leader pricing: Supermarkets and department stores often drop the price on well-known brands to stimulate additional store traffic. The manufacturers of these brands typically disapprove of their products being used as loss leaders because this practice can dilute the brand image and bring complaints from other retailers who charge the list price. Manufacturers have tried to restrain intermediaries from loss-leader pricing through lobbying for retail-price-maintenance laws, but these laws have been revoked.
- Special-event pricing. Sellers will establish special prices in certain seasons to draw in more customers. Every August, there are back-to-school sales.
- Cash rebates: Auto companies and other consumer-goods companies offer cash rebates to encourage purchase of the manufacturers' products within a specified time period. Rebates can help clear inventories without cutting the stated list price.
- Low-interest financing: Instead of cutting its price, the company can offer customers low-interest financing. Automakers have announced 3 percent financing and in some cases no-interest financing to attract customers.
- Longer payment terms: Sellers, especially mortgage banks and auto companies, stretch loans over longer periods and thus

lower the monthly payments. Consumers often worry less about the cost (i.e., the interest rate) of a loan and more about whether they can afford the monthly payment.

- Warranties and service contracts: Companies can promote sales by adding a free or low-cost warranty or service contract.
- Psychological discounting. This strategy involves setting an artificially high price and then offering the product at substantial savings; for example, "Was \$359, now \$299." Illegitimate discount tactics are fought by the Federal Trade Commission and Better Business Bureaus. However, discounts from normal prices are a legitimate form of promotional pricing.

Promotional-pricing strategies are often a zero-sum game. If they work, competitors copy them and they lose their effectiveness. If they do not work, they waste company money that could have been put into longer impact marketing tools, such as building up product quality and service or strengthening product image through advertising.

Companies often adjust their basic price to accommodate differences in customers, products, locations, and so on. Discriminatory pricing occurs when a company sells a product or service at two or more prices that do not reflect a proportional difference Costs. Discriminatory pricing takes several forms:

- Customer-segment pricing. Different customer groups are charged different prices for the same product or service. For example, museums often charge a lower admission fee to students and senior citizens.
- Product-form pricing. Different versions of the product are priced differently but not proportionately to their respective costs. A 48-ounce bottle of mineral water can be priced at \$2.00. A much smaller amount (1.7 ounces) of the same water can be packaged in a moisturizer spray for \$6.00. Through product-form pricing, one can charge \$3.00 an ounce in one form and about \$.04 an ounce in another.

- 5 • Image pricing: Some companies price the same product at two different levels based on image differences. A perfume manufacturer can put the perfume in one bottle, give it a name and image, and price it at \$10 an ounce. It can put the same perfume in another bottle with a different name and image and price it at \$30 an ounce.
- 10 • Location pricing: The same product is priced differently at different locations even though the cost of offering at each location is the same. A theater varies its seat prices according to audience preferences for different locations.
- 15 • Time pricing: Prices are varied by season, day, or hour. Public utilities vary energy rates to commercial users by time of day and weekend versus weekday. A special form of time pricing is yield pricing, which is often used by hotels and airlines to ensure high occupancy. To ensure that all its berths are full, for example, a cruise ship may lower the price of the cruise two days before sailing.

20 For price discrimination to work, certain conditions must exist. First, the market must be segmentable and the segments must show different intensities of demand. Second, members in the lower-price segment must not be able to resell the product to the higher-price segment. Third, competitors must not be able to undersell the firm in the higher-price segment. Fourth, the cost of segmenting and policing the market must not exceed the extra revenue derived from price discrimination. Fifth, the practice must not breed customer resentment and ill will. Sixth, the particular form of price discrimination must not be illegal.

25 As a result of deregulation in several industries, competitors have increased their use of discriminatory pricing. Airlines charge different fares to passengers on the same flight depending on the seating class; the time of day (morning or night coach); the day of the week (workday or weekend); the season; the person's company, past business, or status (youth, military,

30

senior citizen); and so on. Airlines are using yield pricing to capture as much revenue as possible.

Most consumers are probably not even aware of the degree to which they are the targets of discriminatory pricing. For instance, catalog retailers routinely send out catalogs that sell identical goods except at different prices. Consumers who live in a more free-spending zip code may see only the higher prices.

Computer technology is making it easier for sellers to practice discriminatory pricing. For instance, they can use software that monitors customer's movements over the Web and allows them to customize offers and prices to each customer. New software applications, however, are also allowing buyers to discriminate between sellers by comparing prices instantaneously.

Some forms of price discrimination (in which sellers offer different price terms to different people within the same trade group) are illegal. However, price discrimination is legal if the seller can prove that its costs are different when selling different volumes or different qualities of the same product to different retailers. Predatory pricing - selling below cost with the intention of destroying - is against the law. But although predatory pricing is thought to be against the law, courts regard it as a legal fiction: theoretically against the law but almost impossible to prove. A new generation of economists, however, is arguing it is wrong and illegal, especially where software is concerned. Economist Brian Arthurs holds that once a company gains a decisive lead in an industry, such as computing, where there is a strong tendency for consumers to band around one standard, it is almost impossible for rivals to unseat it (even when the predator raises its prices).

Price-setting logic must be modified when the product is part of a product mix. In this case, the firm searches for a set of prices that maximizes profits on the total mix. Pricing is difficult because the various products have demand and cost interrelationships and are subject to different degrees of competition. We can distinguish six situations involving product-mix pricing:

product-line pricing, optional-feature pricing, captive-product pricing, two-part pricing, by-product pricing, and product-bundling pricing.

Companies normally develop product lines rather than single products and introduce steps. In many lines of trade, sellers use well-established price points for the products in their line. A men's clothing store might carry men's suits at three price levels: \$200, \$350, and \$500. Customers will associate low-, average-, and high-quality suits with the three price points. The seller's task is to establish perceived-quality differences that justify the price differences.

Many companies offer optional products, features, and services along with their main product. The automobile buyer can order electric window controls, defoggers, light dimmers, and an extended warranty. Pricing these options is a sticky problem, because companies must decide which items to include in the standard price and which to offer as options. For many years, U.S. auto companies advertised a stripped-down model for \$10,000 to pull people into showrooms. The economy model was stripped of so many features that most buyers left the showroom spending \$13,000.

Restaurants face a similar pricing problem. Restaurant customers can often order or liquor in addition to the meal. Many restaurants price their liquor high and their food low. The food revenue covers costs, and the liquor produces the profit. This explains why servers often press hard to get customers to order drinks. Other restaurants price liquor low and food high to draw in a drinking crowd.

Some products require the use of ancillary, or captive, products. Manufacturers of razor and cameras often price them low and set high markups on razor blades and film, respectively.

There is a danger in pricing the captive product too high in the aftermarket (the market for ancillary supplies to the main product). An equipment manufacturer, for example, makes high profits in the aftermarket by pricing its parts and service high. This practice has given rise to "pirates," who counterfeit the parts and sell them to "shady tree" mechanics who install

them, sometimes without passing on the cost savings to customers. Meanwhile, the original equipment manufacturer loses sales."

Service firms often engage in two-part pricing, consisting of a fixed fee plus a variable usage fee. Telephone users pay a minimum monthly fee plus charges for calls beyond a certain area. Amusement parks charge an admission fee plus fees for rides over a certain minimum. The service firm faces a problem similar to captive-product pricing-namely, how much to charge for the basic service and how much for the variable usage. The fixed fee should be low enough to induce purchase of the service; the profit can then be made on the usage fees.

The production of certain goods - meats, petroleum products, and other chemicals - often results in by-products. If the by-products have value to a customer group, they should be priced on their value. Any income earned on the by-products will make it easier for the company to charge a lower price on its main product if competition forces it to do so. Sometimes companies don't realize how valuable their by-products are.

Sellers often bundle their products and features at a set price. An auto manufacturer might offer an option package at less than the cost of buying all the options separately. A theater company will price a season subscription at less than the cost of buying all the performances separately. Because customers may not have planned to buy all the components, the savings on the price bundle must be substantial enough to induce them to buy the bundle.

Some customers will want less than the whole bundle. Suppose a medical equipment supplier's offer includes free delivery and training. A particular customer might ask to forgo the free delivery and training in exchange for a lower price. The customer is asking the seller to "unbundle" or "rebundle" its offer. If a supplier saves \$100 by not supplying delivery and reduces the customer's price by \$80, the supplier has kept the customer happy while increasing its profit by \$20.

Several circumstances might lead a firm to cut its price. One is excess plant capacity. The firm needs additional business and cannot generate it

through increased sales effort, product improvement, or other measures. It may resort to aggressive pricing. But in initiating a price cut, the company may trigger a price war. Another circumstance is a declining market share.

Companies sometimes initiate price cuts in a drive to dominate the market through lower costs. Either the company starts with lower costs than its competitors or it initiates price cuts in the hope of gaining market share and lower costs. But a price-cutting strategy involves possible traps:

- Low-quality trap: Consumers will assume that the quality is low.
- Fragile-market-share trap: A low price buys market share but not market loyalty. The same customers will shift to any lower-price firm that comes along.
- Shallow-pockets trap: The higher-priced competitors may cut their prices and may have longer staying power because of deeper cash reserves.

Companies may have to cut their prices in a period of economic recession. During hard times, consumers reduce their spending.

A successful price increase can raise profits considerably. For example, if the company's profit margin is 3 percent of sales, a 1 percent price increase will increase profits by 33 percent if sales volume is unaffected. The assumption is that a company charged \$10 and sold 100 units and had costs of \$970, leaving a profit of \$30, or 3 percent on sales. By raising its price by 10 cents (1 percent price increase), it boosted its profits by 33 percent, assuming the same sales volume.

A major circumstance provoking price increases is cost inflation. Rising costs unmatched by productivity gains squeeze profit margins and lead companies to regular rounds of price increases. Companies often raise their prices by more than the cost increase in anticipation of further inflation or government price controls in a practice called anticipatory pricing. Companies hesitate to offer long-term price contracts.

Another factor leading to price increases is overdemand. When a company cannot supply all of its customers, it can raise its prices, ration

supplies to customers, or both. The price can be increased in the following ways. Each has a different impact on buyers.

- **Delayed quotation pricing.** The company does not set a final price until the product is finished or delivered. Delayed quotation pricing is prevalent in industries with long production lead times, such as industrial construction and heavy equipment.
- **Escalator clauses:** The company requires the customer to pay today's price and all or part of any inflation increase that takes place before delivery. An escalator clause bases price increases on some specified price index. Escalator clauses are found in many contracts involving industrial projects of long duration.
- **Unbundling:** The company maintains its price but removes or prices separately one or more elements that were part of the former offer, such as free delivery or installation. Many restaurants have shifted from total dinner pricing to à la carte pricing. A joke in countries with high inflation is that the current price of a car no longer includes the tires and steering wheel.
- **Reduction of discounts:** The company instructs its sales force not to offer its normal cash and quantity discounts.

A company needs to decide whether to raise its price sharply on a one-time basis or to raise it by small amounts several times. When costs at a franchised chain of hairdressers, management debated between raising the haircut price immediately from \$10 to \$12 or raising the price to \$11 this year and \$12 the following year. Generally, consumers prefer small price increases on a regular basis to sharp price increases

In passing price increases on to customers, the company must avoid the image of being a price gouger. Companies also need to think of who will bear the brunt of increased prices. Customer memories are long, and they will turn against companies they perceive as price gougers when the market softens.

There are some techniques for avoiding this image: One is that a sense of fairness must surround any price increase, and customers must be

given advance notice so they can do forward buying or shop around. Sharp price increases need to be explained in understandable terms. Making low-visibility price moves first is also a good technique: eliminating discounts, increasing minimum order sizes, curtailing production of low-margin products are some examples. And contracts or bids for long-term projects should contain escalator clauses based on such factors as increases in recognized national price indexes.

Companies can also respond to higher costs or overdemand without raising prices. The possibilities include the following:

- Shrinking the amount of product instead of raising the price. (Maintaining a candy bar price but trimming its size, as compared to maintaining the size but raising the price.)
- Substituting less expensive materials or ingredients. (Many candy-bar companies substitute synthetic chocolate for real chocolate to fight the price increases in cocoa.)
- Reducing or removing product features to reduce cost. (Engineering down a portion of a product line so they could be priced competitively with those sold in discount stores.)
- Removing or reducing product services, such as installation or free delivery.
- Using less expensive packaging material or larger package sizes.
- Reducing the number of sizes and models offered.
- Creating new economy brands. (Introducing generic items selling at 10 percent to 30 percent less than national brands.)

Any price change can provoke a response from customers, competitors, distributors, suppliers, and even government.

Customers often question the motivation behind price changes. A price cut can be interpreted in different ways: The item is about to be replaced by a new model; the item is faulty and is not selling well; the firm is in financial trouble; the price come down even further; the quality has been reduced.

A price increase, which would normally deter sales, may carry some positive meanings to customers: The item is "hot" and represents an unusually good value.

Customers are most price sensitive to products that cost a lot or are bought frequently. They hardly notice higher prices on low-cost items that they buy infrequently. Some buyers are less concerned with price than with the total costs of obtaining, operating, and servicing the product over its lifetime. A seller can charge more than competitors and still get the business if the customer can be convinced that the time costs are lower.

A firm contemplating a price change has to worry about competitors' reactions. Competitors are most likely to react where the number of firms are few, the product is homogeneous, and buyers are highly informed.

How can a firm anticipate a competitor's reactions? One way is to assume that the competitor reacts in a set way to price changes. The other is to assume that the competitor treats each price change as a fresh challenge and reacts according to self-interest at the time. In this case, the company will have to figure out what lies in the competitor's self-interest. It will need to research the competitor's current financial situation, recent sales, customer loyalty, and corporate objectives. If the competitor as a has a market-share objective, it is likely to match the price change. If it has a profit-maximization objective, it may react by increasing the advertising budget or improving product quality.

The problem is complicated because the competitor can put different interpretations on a price cut: that the company is trying to steal the market, that the company is doing poorly and trying to boost its sales, or that the company wants the whole industry to reduce prices to stimulate total demand.

How should a firm respond to a price cut initiated by a competitor? In markets characterized by high product homogeneity, the firm should search for ways to enhance augmented product, but if it cannot find any, it will have to meet the price reduction. If the competitor raises its price in a homogeneous product market, the other firms might not match it, unless the

price increase will benefit the industry as a whole. By not matching it, the leader will have to rescind the increase.

In nonhomogeneous product markets, a firm has more latitude. The firm needs to consider the following issues: (a) Why did the competitor
5 change the price? Is it to steal the market, to utilize excess capacity, to meet changing cost conditions, or to lead an industrywide price change? (b) Does the competitor plan to make the price change temporary or permanent? (c) What will happen to the company's market share and profits if it does not respond? Are other companies going to respond? (d) What are the
10 competitor's and other firms' responses likely to be to each possible reaction?

Market leaders frequently face aggressive price cutting by smaller firms trying to build market share. Brand leaders also face lower-priced private store brands. The brand leader respond in several ways:

- Maintain price: The leader might maintain its price and profit
15 margin, believing that (a) it would lose too much profit if it reduced its price, (b) it would not lose much market share, and (c) it could regain market share when necessary. The leader believes that it can hold on to good customers and give up the poorer ones. However, the argument against price maintenance is that the attacker gets more confident, the leader's sales force gets demoralized, and the leader loses more share than
20 expected. The leader panics, lowers price to regain share, and finds that regaining its market position is more difficult and costly than expected.
- Maintain price and add value: The leader could improve its
25 product, services, and communications. The firm may find it cheaper to maintain price and spend money to improve perceived quality than to cut price and operate at a lower margin.
- Reduce Price: The leader might drop its price to match the
30 competitor's price. It might do so because (a) its costs fall with volume, (b) it would lose market share cause the market is price

sensitive, and (c) it would be hard to rebuild market are once it is lost. This action will cut profits in the short run.

- Increase price and improve quality. The leader might raise its price and introduce new brands to bracket the attacking brand.
- Launch a low-price fighter line: Add lower-price items to the line or create a separate lower-price brand. For instance, a low-priced seasonal film or a lower-priced beer brand could be introduced.

The best response varies with situation. The company has to consider the product's stage in the life cycle, its importance in the company's portfolio, the competitor's intentions and resources, the market's price and quality sensitivity, the behavior of costs with volume, and the company's alternative opportunities.

An extended analysis of company alternatives may not be feasible when the attack occurs. The company may have to react decisively within hours or days. It would make better sense for the company to anticipate possible competitors' price changes and to prepare contingent responses. Reaction programs for meeting price changes find their greatest application in industries where price changes occur with some frequency and where it is important to react quickly - for example, in the meatpacking, lumber, and oil industries.

Thus, the price at which the Kimberly-Clark product is being offered could be obtained or discovered by the copier of the product. The price could be the retail price, i.e., the price that a consumer would pay at the point of sale, such as a grocery store, drug store, or any retail store. The retail price is collected by use of the UPC code. Data on retail pricing of products sold through food, drug and mass merchandise channels can be obtained from scanner data services such as AC Nielsen or IRI. This data can be quantified by the following:

average retail price = total sales dollars scanned / total units scanned

average non-promoted price = average price of units sold without temporary price reduction (TPR), advertisement, and/or special display of product

5 average promoted price = average price of units sold with TPR, advertisement, and/or special display of product.

The price could also be a wholesale price or other price that is offered or paid as the products moves through the chain of distribution from Kimberly-Clark to the customer/end-user. The wholesale price depends in part on gross pricing, which is the collection of prices provided on a price list from the manufacturer to the wholesale or retail outlet. This list can have multiple prices for the same basic product, wherein the prices will vary according to order size and delivery options. The wholesale price also depends in part on net pricing, which is the gross pricing less any payment terms discounts allowed. These discounts are typically 1% to 2%.

15 Once these prices have been discovered, obtained or ascertained, the copier of the Kimberly-Clark product could price its product at or below the Kimberly-Clark price. This may be accomplished in many different ways. For instance, net of trade pricing can be employed to affect the retail price. Net of trade pricing comprises a broad range of discounts and/or subsidies to the retailer that enable the retail price to be reduced by up to about 50% relative to the average non-promoted price. Net of trade pricing can involve the use of trade promotion funds by the manufacturer to assist the retailer in advertising. Net of trade pricing can also involve the use of pricing funds by the manufacturer to assist the retailer in discounting the product. These discounts and/or subsidies can be offered on a single product and/or product line or may be combined with a variety of products and/or product lines.

25 Furthermore, copied products may be packaged in such a way as to give the appearance of having a price lower than the Kimberly-Clark product. For instance, a package of three rolls could be sold for less than a package of four rolls. In another instance, a single roll and/or multiplicity of rolls having a given sheet count per roll could be sold for less than a single roll and/or multiplicity of rolls having a larger sheet count per roll. An important

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consideration then is the average price paid per roll of product or sheet of product.

A very direct method of discounting is the provision of coupons or vouchers to the consumer. In this way, the final price is effectively lowered in that the price the consumer pays is less than the declared price for the product at a given retail outlet. These discounts may also take the form of rebates, wherein the consumer is refunded all or a part of the purchase price. Also, the consumer may be provided with a free sample of the product, or free samples of other products may be provided with the product that is for sale. Many of these discounts are not taken into account by scanner data services.

In general there is provided a device for mounting a wet wipes dispenser to another surface. That surface may be, by way of example, a wall in a bathroom, a kitchen wall, or a bathroom vanity wall. The device may be used with, or adapted for use with, most any type of wet wipes dispenser, such as the various dispensers illustrated and disclosed herein. The device is ideally adapted to work in conjunction with a conventional bath tissue holder to permit a dispenser to be securely, yet removably attached to the wall. A conventional bath tissue holder is the type that is typically found in a home. Such holders have posts that protrude from the wall and a rod or roller that is positioned between the posts. These holders may also be partially recessed into the wall. Such a holder and a holder with a mounting assembly engaged are illustrated in Figures 66-68. The device may also be used in the absence of a conventional bath tissue holder and may be adapted to provide that the dispenser is fixed to the wall.

For example, the system may have a dispenser that has a housing, which is capable of being mounted to a surface, such as a wall, a cabinet, an existing bath tissue dispenser, a toilet, a toilet tank, a stall wall, or a dashboard of an automobile. The dispenser has an opening that holds a cartridge, which contains the wet wipes. These cartridges are sealed and may be grouped in packages of multiple cartridges. Thus, a package of cartridges may be provided to a user. The user may then select and open one of the cartridges, put it in the dispenser, and use the wipes as needed.

When the wipes are used up, the user may simply discard the old cartridge and replace it with a new one. Thus, this system enables the user to conveniently obtain and keep several cartridges of wipes on hand and then use the wipes as needed. By using sealed cartridges to refill the dispenser the user is using a new and fresh product each time and a product that is in contact with fresh surfaces.

By way of example, referring to Figures 1 through 15, there is provided a dispenser 1, which has a housing 2, a tray 3, a cover 7, and a mounting assembly 8. The tray and the cover form a gap 4, through which a wet wipe can extend. That portion of the wipe extending through the gap may be referred to as a tail. The tray and cover additionally have recesses 5, that form an indentation that provides a finger hold, or point where a user can grasp the wet wipe to pull it from the dispenser. Although optional, this dispenser is also provided with a roller 6 for mounting and dispensing a roll of another product, such as dry or conventional bath tissue.

In general the dispenser system illustrated herein can be used with or without conventional dry toilet or bath tissue. If conventional tissue is used with wet wipes it could be positioned in a side-by-side manner, above, or below the wet wipes.

Figures 1 and 4-8 show the dispenser with the cover closed. In Figures 4 and 6, it can be seen most easily that the dispenser generally has a top 100, a side 101, a side 102, a back 103, a bottom 104 and a front 105. Figure 2 show the dispenser and a cartridge in a exploded view. Figure 3 show the dispenser assembled and in a fully opened condition. The fully opened condition provides access to screw 9.

The housing may be made from any suitable material, such as plastic, wood, ceramic, porcelain, glass, paper, metal, thermoplastic elastomers, or composite materials. For example, polypropylene, polyesters such as polybutylene terephthalate (Pbt), Pbt glass filled, Pbt 15% glass filled, fiberglass, carbon fiber, and acrylonitrile-butadiene-styrene (ABS) may be used to make the housing.

The housing may have different shapes and sizes. When the dispenser is intended for use in a home it is desirable that it be of a size that is similar to conventional bath tissue roller mounts. It is particularly desirable that the dispenser be as compact as possible for home use. Further if the cover is in the range of from about 4-1/2 inches (114.3 mm) to 6-7/8 inches (174.6 mm) in width it will be able to aesthetically fit in or mount to the vast majority of toilet paper holders that are in existing houses. Preferably the width of the cover may be greater than about 3 inches (76.2 mm), less than about 6 inches (152.4 mm), less than about 7 inches (177.8 mm), and less than about 8 inches (203.2 mm). The 4-1/2 inches (114.3 mm) by 6-7/8 inches (174.6 mm) size provides an added benefit of enabling one size of dispenser to be used in the vast majority of applications in the home. Smaller sizes may be desirable for certain applications or aesthetic reasons, such as a small bathroom. The dispenser and its components may have varied colors, such as the almons and whites that are seen in porcelain bath fixtures or may have any other desirable color. When the housing is used for industrial or institutional purposes or in commercial applications it may be desirable to make the housing substantially larger and able to hold substantially more rolls of either or both wet and dry wipes and tissue.

The housing may be configured as shown in Figure 1 to mount onto or into a conventional wall mount toilet paper holder. It may also be mounted directly to a wall, for example by way of a screw, through mounting hole 30, or by other means of fixing the housing to a wall or surface, such as glue, nails, screws, rivets, magnetic attachments, staples, engaging brackets and pressure mountings against the sides of a conventional wall mount for toilet tissues. The housing also may have a lock 13 that engages a tab 12 on the cover to keep the cover closed, yet provide an easy way to open the dispenser. Various other ways to lock or fix the cover to the housing may also be employed. For example, a lock and key approach may be desirable in commercial applications or houses where there are small children present.

The housing may also have an opening 14 that is made to receive cover mounts 29. The opening 14 and the cover mounts 29 may further be

configured to receive a conventional toilet tissue roller. The housing may further be configured to support a means of dispensing, storing, containing or mounting another product such as wipes, toilet tissue, or the like. For example, the housing may support a shelf which may in turn support a container of wet wipes having the same or a different composition from that of the wipes inside the housing. The housing may further have an opening 28 for receiving a pin 27 on the tray 3.

The cover 7 may be made of any similar material to the housing; it may be the same as or a different material from the housing. The cover may be clear or have a window for viewing the amount of wet wipes that remain in the dispenser. It is noted, however, that because the cover is in direct contact with the wet wipe, the cover forms the top of the cartridge when the cartridge is inserted into the dispenser and the cover closed, and wood or any other material that would support bacterial growth would not be favored. It is preferred that all materials that are in contact with the wet wipes be made from materials that discourage, or do not support bacterial growth.

Moreover, anti-bacterial agents, medicinal, botanical or skin and health agents may be added to the materials that are used to construct the components of the dispenser system, including by way of example the dispenser housing, the tray, the wiper blade, the wiper assembly, the cartridge, the cover and the gaskets. In particular any component that is in contact or associated with the wet wipes may have such an agent added to it.

The cover is designed to cooperate with the cartridge 11 to form a barrier to moisture loss from the wet wipes. The cover may also be designed to cooperate with other components of the dispenser system to form a moisture barrier. The dispenser can maintain wet wipes in a moist condition when fully closed for at least 1 day, for at least 2 days, for at least 5 days and for at least 14 days, and preferably for more than 14 days at room conditions of 73 °F (22.8°C) and 50% relative humidity. The dispenser when fully closed can maintain at least about 15%, at least about 20%, at least about 25%, at least about 50%, and at least about 95% of the moisture of the wipes for a 14 day period at 73 °F (22.8°C) and 50% relative humidity. These moisture

retention values can be obtained with a tail of the wipe protruding through the gap, the tail having a length of not more than 1.5 inches (38.1 mm).

The cover may further be designed to cooperate with the cartridge 11, or other components of the dispenser system, to form a barrier to contamination of the wipes within the dispenser. Thus, the cover in cooperation with the cartridge, or other components of the dispenser system, may form a barrier to dirt, dust, mold spores and bacteria.

The space between the inner surface of the front cover and the surface of the lip of the cartridge may vary between about 2 mm and about 10 mm. In this way there is formed a dome above an open cartridge that at least partially covers that opening, which dome is preferably less than about 15 mm, less than about 10 mm, less than about 5 mm and ideally is less than about 2 mm above the lip of the cartridge. The height of the dome may also be measured from the surface of a full roll of wet wipes in which an additional 2 to 7 mm may be added to the height of the dome. Higher domes may also be employed, but such higher domes may be less aesthetically pleasing and may provide for greater amounts of evaporation or moisture loss from the wet wipes.

The cover may be provided with an inside rim 33 (see, e.g., Figure 3) and a wiper 10 (see, e.g., Figures 2 and 3). The cover inside rim and wiper cooperate with the lip 31 of the cartridge. In this way when the cover is closed the inside rim is brought against the lip of the cartridge and the wiper is similarly brought against the tray including the guides, as well as the lip of the cartridge. In a further embodiment, the cover may be provided with a lip, and the cartridge may be provided with a rim to facilitate the cooperation.

The distance between the inside of the cover where the wiper is located and the tray may be less than the height of the wiper blade. Thus, in this configuration the wiper blade would be placed under compression against the lip, the tray, or the guides 16 or all of them depending on the position of the wiper. Here the wiper blade would exert pressure on the wet wipes. The wiper may also be positioned so that it contacts the wet wipe but does not exert pressure against it, or be positioned so that it is a short distance above

the wet wipe. The amount of pressure that the wiper exerts on the wet wipe may vary depending upon several factors, including the purpose for the wiper, the material that the wiper blade is made from, the material that the wet wipe is made from and the material that the cartridge lip 31 is made from.

5 The tray 3 may be made from any similar material to the housing or cover, and it may be the same material or different material from those of components. The tray may have side walls 22, 23, 80 and 81. Walls 22 and 23 correspond to the sides of the dispenser, wall 80 corresponds to the top of the dispenser, and wall 81 corresponds to the bottom of the dispenser. The
10 tray shown in the figures does not have a back wall, although one may be provided if desired. The side walls may be provided with recesses 24, 25, and 26. These recesses cooperate with protrusions 19, 20 and 21 on the cartridge (19 with 26, 20 with 24 and 21 with 25). In this way the cartridge is securely, yet easily removably held in the dispenser. The tray opening 15
15 is sized in relation to the cartridge (or the cartridge may be sized in relation to the tray opening) so that the cartridge can easily be slid into and out of the dispenser.

 The tray and cartridge together result in a keyed type arrangement that allows the cartridge to be inserted fully or properly in only one orientation into
20 the dispenser. Thus the two elements fit together in a manner similar to a lock and key. This assures that the roll of wipes will unwind from a predetermined orientation, i.e., from the bottom of the roll or the top of the roll. As is apparent from Figure 2 the tray opening and cartridge are not symmetrically shaped. This asymmetry provides for the keyed arrangement.
25 An object is considered symmetrical if there can be a plane which passes through the object such that the portions on either side of the plane are reflections of each other.

 In the embodiment shown in Figure 2 the asymmetry in the vertical plane is obtained by having a different number and location of protrusions and
30 recesses on opposite sides. It is recognized that any suitable means to accomplish asymmetry may be employed, such as notches, tongue and groove, or the shapes of the opening and detents. For example, some of the

cartridge walls may be flat while others are rounded, or the cartridge lip may be non-planar. Additionally, labeling or marking of the cartridge, the tray, or both can create the effect of asymmetry.

5 The housing may further have guides 16. The guides may be movable or fixed. The guides may have raised surfaces 16a and lowered surfaces 16b. These guides may be made from the same type of material as the housing. They may be integral with the housing. The guides and the housing may be one continuous piece of plastic. The guides may be designed to cooperate with the wiper to prevent or reduce the tendency of the wipe to skate to one side of the dispenser as the wipe is pulled out and torn off. The guides may also cooperate with the wiper to regulate and control the amount of drag. The tray may have barbs 71 to discourage the placement of wet wipes directly into the dispenser without the use of a protective package, a practice which could cause premature drying of the wet wipes or could allow the growth of bacteria and/or mildew in the wipes. An example of tray without barbs is seen at Figure 26.

15 The cartridge may be made out of any suitable material, such as plastic. It is preferable that the cartridge be made from a light weight, inexpensive, disposable and recyclable material. The cartridge has side walls 17, 18, 39 and 40 and bottom wall 41. The cartridge has a lip 31 that forms an opening at the top of the cartridge. The cartridge has ribs 32. The ribs may extend part way or all the way along the sides 39 and 40 and the bottom 41. The ribs 32 may cause grooves or indentations to form in the rolls, depending on the density of the roll and conditions of use. These grooves are not necessary to the use of the dispenser system. The curvature of the cartridge bottom is between 40 and 45 degrees, preferably between 42 and 44 degrees.

25 The cartridge may be any shape or size provided that it fits in or cooperates with the dispenser. For example a cartridge that would be useful for application in the home would have side walls 17 and 18 that are less than 105 mm and side wall 39 and 40 that are less than 134 mm.

Instead of protrusions 19, 20 and 21, the cartridge may have recesses at those locations, and the tray may have corresponding protrusions. Moreover, the cartridge may have ribs, like rib 32, along side walls 17 and 18.

5 The cartridge may have a lid or cover with a removable strip. Removal of this strip would result in a gap through which the wipes can be dispensed. In this configuration, it may be useful to attach the tail of the wipes to the strip. In this way, removal of the strip facilitates the threading of the wipes through the gap. The cartridge may also have a removable seal over the cover.

10 The container for the wet wipes may also be flexible. A flexible package made of plastic, metal foil, paperboard or combinations thereof may be used to seal the wipes in a wrapper or may be configured as a pouch with a removable cover. Any material and configuration that prevents the loss of moisture from the wet wipes may be used to package the wipes. A removable cover may contain a removable strip to facilitate dispensing of the wipes. The cover may also contain a lip to cooperate with the cover inside rim and the wiper. The combination of the wipes and the container may be the same size as or smaller than the cartridge so as to fit within the tray.

15 Figure 16 shows a dispenser in the closed condition with a tail of a wet wipe 36 protruding from gap 4 into the finger hold indentation that is formed by recess 5. In use the tail of the wet wipe would be grasped and pulled generally in the direction of arrow 35 causing the roll to unwind and the wipe to be dispensed from the dispenser. In use the wet wipe may also be subjected to forces tangential and perpendicular to the direction of arrow 35. If these forces occur the guides and the wiper help to prevent the wipe from skating to one side of the gap and bunching up or binding.

20 Figure 17 is an exploded view of a dispenser, cartridge and roll of wipes 34 showing the relationship of these components.

25 Figure 18 shows a roll of wipes 34 that has a tail 36 and further defines the axis of the roll as 37. Rolls useful with this dispenser or as part of a dispensing system may contain from as little as a few linear inches (or cm) to more than 450 linear inches (11.43 m), to more than linear 600 inches (15.24 m) to more than a thousand linear inches (25.40 m) of wet wipes. The rolls

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may have a web of material that may have any number of sheets. Usually, the sheets are separated by perforations that enable the sheet to be easily torn from the web but are strong enough that they will not separate while the web is being pulled from the dispenser. An example of a roll that is particularly useful for applications in the home is one that has a diameter of about 2 inches (50.8 mm) to about 3 inches (76.2 mm), of about less than 5 ½ inches (139.7 mm), and preferably has a diameter of about 3 inches (76.2 mm) and more preferably of about 2-7/8 inches (73.0 mm). This roll has from about 400 linear inches (10.16 m) of wipes to about 1000 linear inches (25.40 m) of wipes. Without limitation, each sheet length may be from about 3 inches (76.2 mm) to about 10 inches (254.0 mm) and preferably are about 4.5 inches (114.3 mm). This roll may further have a density of from about 0.3 g/cc to about 1 g/cc, from about 0.5 g/cc to about 1 g/cc and preferably about 0.62 g/cc. A particular example of a roll may be one having a diameter of about 2 inches (50.8 mm) and containing about 450 linear inches (11.43 m) of wipe. Another particular example of a roll may be one having a diameter of about 3 inches (76.2 mm) and containing 450 linear inches (11.43 m) of wipes.

The preferred form of wet wipes for use with the dispenser system is a solid coreless roll as shown in Figure 18. It is to be understood, however, that cored rolls (hollow cores, solid cores and partially solid cores), hollow coreless rolls, and stacks of sheets may also be used in the dispenser system. When density values are referred to herein, it is for the density of the roll and this would exclude any void, for a coreless hollow roll, or space occupied by a core for a cored roll.

Various tests and observations of physical properties are reported in Tables I, II, III, and IV.

Solution add-on level is the amount of solution by weight divided by the amount of dry wipe by weight multiplied by 100 to provide a percentage value.

Base sheet converting refers to the width of the roll and the sheets in the roll, i.e., along axis 37 of the roll in inches.

Perforation refers to the amount of cutting and the distance between the cuts in the perforation that separates the sheets in a roll. There are three parameters to this measurement: cut length, bond length and bond spacing. The bond spacing is equal to the sum of the cut length plus the bond length. By way of example, perforations that are useful with wet wipes are ones that have a bond length of 0.02 inch (0.51 mm), a cut length of 0.05 inch (1.27 mm), and a bond spacing of 0.07 inch (1.78 mm), or one that has a bond length of 0.04 inch (1.02 mm), a cut length of 0.09 inch (2.29 mm) and a bond spacing of 0.13 inch (3.30 mm).

Dry basis weight is the basis weight of the wipe before the solution is added to the wipe, i.e., before it is wet.

Wet thickness is the thickness of a wet wipe, i.e., after the solution has been added to it, in mm.

Sheet count is the number of sheets in a roll, i.e., the number of sheets created by the perforations.

Although all tests are done under TAPPI standard test conditions, the wet wipes are not equilibrated to those conditions. Instead, the wipes are removed from a sealed container or cartridge and tested within a few, generally less than 5-10, minutes after opening. This is about a 5 minute variation in this time period that the wet wipe is exposed to the atmosphere, which does not materially or significantly alter the test results.

Tensile, stretch and TEA (total energy absorbed) values were obtained on the wet product following ASTM 1117-80, section 7, with the following modifications: sample dimensions were 1+/- 0.04 inch (25.4 +/- 1.0 mm) wide and 4.25 +/- 0.04 inches (108.0 +/- 1.0 mm) wide; initial gauge length was 3 +/- 0.04 inches (76.2 +/- 1.0 mm); test speed is 12 inches/minute (305.0 mm/min).

MD tensile is the peak load before failure per inch width of the sample, as determined in the machine direction. CD tensile is the peak load before failure per inch width of the sample, as determined in the cross direction. MD stretch is the percentage of elongation the wipe has in the machine direction at the peak load. CD stretch is the percentage of elongation of the wipe in the

cross machine direction at the peak load. Total Energy Absorbed (TEA) is the area under the force-elongation curve (in units of lb. and ft., respectively) from the start to the failure point divided by the initial surface area of the sample between the upper and lower grips. For these samples, this surface area was 3 sq. inches (19.4 cm²). Ten specimens were tested for each code, and the average was calculated and reported. The test can be carried out on a standard tensile tester such as a MTS Sintech 1/G test machine with TestWorks 3.10 software. Both the Sintech test machine and the TestWorks software are available from MTS Corporation located at 1400 Technology Drive, Eden Prairie, MN.

Detach refers to the force in grams per sheet that is required to break a perforation, i.e., the amount of force required to separate two sheets in a roll along the perforation. These properties were determined using a MTS Sintech 1/G test machine with TestWorks 3.10 software. Two sheets were removed from a roll. The sheets had a width of 4.25 inches (108.0 mm), and were connected by perforations along the width. The sheets were folded in half along the length such that the width of the sample was 2-1/8 inches (54.0 mm). The top and bottom of the sample were placed in grips having an internal spacing of 2 inches (50.8 mm), such that the perforation line was centered between the upper and lower grips. The upper grip was then displaced upward (i.e. away from the lower grip) at a rate of 10 inches/minute (254.0 mm/min) until the sample was broken along the perforations. The applied force and sample elongation were measured throughout the test. The peak load from the force-elongation curve is recorded so that the detach strength is expressed in units of grams/sheet. The average results from ten samples are reported.

Percentage strain at peak load ("% strain @ pk load") was determined from the results of the test described above. The elongation at the peak load is divided by the initial sample length of 2 inches (50.8 mm), and the result is designated the % strain @ peak load. The average results from ten samples are reported.

Wet thickness refers to the thickness of a wipe that is measured while the sample is subjected to a specified load or weight. The wet thickness of wet wipes and wipes before wetting are reported in Table II. These values are based on samples measuring 3x4 inches (76x102mm) that were individually placed under a confining load of 0.05 pounds/square inch (psi) (345 Pa). The region of the sample that was tested was free of wrinkles and folds. A Starrett Comparator Base Model 653G was used to perform these tests available from Starrett, 121 Crescent St., Athol, MA 01331. This base is precision ground to be flat (tolerance of +/- 0.001 inch, +/- 0.025 mm). A digital displacement indicator (Sony model U30-1SET) was attached to the base via a cantilevered horizontal control arm supported by a vertical shaft. The indicator measures vertical displacement relative to the comparator base to within 0.001 inch (0.025 mm). The load was applied by an acrylic contact foot attached to a vertically traveling spindle shaft that descended to the comparator base. The foot has a diameter of 3.00 inches (76.2 mm), a height of 0.63 inch (16.0 mm) and is flat on the lower surface to a tolerance of +/- 0.001 inch (0.025 mm). The weight of the contact foot, spindle, and the associated hardware, not including the contact force springs in the indicator, is 160.5 +/- 0.1g. The spindle shaft descends to the comparator base with a travel time of 0.5 seconds to 0.75 seconds. The thickness was measured by the indicator as the height of the wipe relative to the surface of the comparator base immediately after the load pressure of 0.05 psi (345 Pa) was applied for 3 seconds. Calibration before testing was performed on a set of standard samples traceable to the National Bureau of Standards.

By way of example and without limitation, wet wipes useful in the present dispensing system may have a dry basis weight from about 10 to about 200 gsm, a dry thickness from about 0.5 to about 2 mm, a wet (i.e., wipe with solution or wetting material added) thickness from about 0.3 to about 0.7 mm, a MD wet tensile at least about 250 g/inch (9.8 g/mm), a CD wet tensile at least about 200 g/inch (7.9 g/mm), a MD wet stretch from about 5% to about 30%, a CD wet stretch from about 5% to about 36%, a TEA MD wet strength of from about 0.5 to 2 ft-lb/sq. inch (0.10 to 0.4 J/cm²), a TEA

CD wet strength of from about 0.5 to 2 ft-lb/sq. inch (0.10 to 0.4 J/cm²), and a solution add-on of about 150-350%.

Peel force measures the amount of force in grams/4.25 inches (g/108.0 mm) required to unroll a roll of wet wipes, i.e., the grams required to unroll a roll that is 4.25 inches (108.0 mm) wide. Thus, these values could be normalized to apply to any width roll in grams/inch of roll width basis. The peel force, as reported in Table II was the force required to unroll a roll as it was resting in an open cartridge and was measured with an MTS Sintech 1/G test machine with TestWorks 3.10 software. A 4.5-inch (114.3 mm) wide clamp with rubber surfaces gripped the tail of a roll, with the roll positioned directly underneath the clamp such that the tail would remain vertical as it was unwound from the roll. The clamp was attached to the crosshead, which pulled the tissue web upward at a speed of 100 cm/minute. Peel force was measured by a 50 Newton load cell. The average load to pull 18 to 20 sheets away from the roll was recorded by averaging two runs in which 4 sheets each were separated and two runs in which 5 sheets each were separated. Only the first 18 to 20 sheets from the roll were used to obtain the measurements of Table II.

The dispensing force, which is the force to pull the wet wipes from the dispenser, may also be determined. This force can be measured with a MTS Sintech 1/G test machine equipped with TestWorks 3.10 software. A clamp with rubber surfaces grips the tail of a roll of wet wipes placed in a dispenser. The initial distance between the clamp and the platform where the dispenser sits is about 12 inches (304.8 mm). The dispenser is placed underneath the clamp. The clamp is attached to the crosshead, which pulls the roll upward at a speed of 100 cm/min. The pull force is measured by a 50 Newton load cell. For each run, the pull force as a function of pull distance curve for pulling 4 sheets away from a roll is recorded using the TestWorks 3.10 software. Based on the curve, the average pull force for each run is calculated. The average load of five runs is used to represent the dispensing force of a given roll. Only the first 23 to 25 sheets from the roll were used to obtain the measurement.

Table I sets out types of wet sheets and their properties. In Example 1, the solution was a sufficient amount of commercial (no salt) solution such as that which is used in the commercially available KLEENEX® brand COTTONELLE® flushable moist wipes product of Kimberly-Clark Corporation.

In Example 2, the solution was a sufficient amount of 4% salt water solution such as a simple 4% salt water solution with other additives as disclosed in the examples of wet wipe applications discussed previously in the Background of Invention, all of which have been and are incorporated herein by reference.

Table I

	Non-Dispersible Wet Wipe Example 1		Dispersible Wet Wipe Example 2	
Basis Weight	60 gsm		60 gsm	
Solution	commercial (no salt)		4% salt solution	
Solution Add on level	175%		228%	
Basesheet Converting	4.25" width		4.25" width	
Perforation Bond Spacing	0.11"		0.07"	
	Run Average	Run STDev	Run Average	Run STDev
Dry Basis Weight (gsm)	57	2	66	4
Wet Thickness (mm)	0.56	0.02	0.47	0.01
Sheet Count	99	0.7	99	1.1
Wet tensiles				
MD Tensile (g/in)	380	26	321	30
MD Stretch (% Elongation)	23	1.4	28	1.6
TEA (Ft-Lb/Sq.In)	0.96	0.06	1.02	0.07
CD Tensile (g/in)	329	28	287	29
CD Stretch (% Elongation)	28	1.8	34	3.5
TEA (Ft-Lb/Sq.In)	0.93	0.09	0.97	0.13
Detach (g/sheet)	752	21	853	34
% strain @ pk load	8	0.5	11	1.1

Table II contains additional data reflecting the properties of disposable wet wipes. This table shows the effects that changing base sheet and solution variables has on the physical properties of the wipes. The pulp used to make these sheets was Weyerhaeuser CF 405. For this example, the binder was example Code E, Table 15, of serial no. 09/564,531. This binder material had a molecular weight of 610,000 and was made from the following monomers provided in the following weight percents: 60% acrylic acid, 24.5% butacrylic acid, 10.5% 2-ethylhexyl-acrylic acid, and 5% AMPS (2-acrylamido-2-methyl-1-propanesulfonic acid).

Table II

Basesheet Variables	100% pulp / 65gsm	100%pulp / 60gsm	100%pulp / 55gsm	15%PET / 55gsm
	22% binder/ 1.1 mm dry thickness	20% binder/ .76 mm dry thickness	20% binder/ .76 mm dry thickness	20% binder/ .84 mm dry thickness
Solutions	0.5% silicone; 0.25% lanolin			
	Example 3	Example 4	Example 5	Example 6
MD Wet Tensile (g/1")	500	452	383	391
CD Wet Tensile (g/1")	445	403	344	310
wet thickness (mm)	0.46	0.40	0.39	0.41
peel force	167	131	106	
Solutions	1.0% silicone; 0.25% lanolin			
	Example 7		Example 8	Example 9
MD Wet Tensile (g/1")	473		401	416
CD Wet Tensile (g/1")	455		348	350
wet thickness (mm)	0.45		0.40	0.39
peel force	170		120	115
Solutions	1.0% silicone; 0.0% lanolin			
	Example 10			
MD Wet Tensile (g/1")	528			
CD Wet Tensile (g/1")	462			
wet thickness (mm)	0.44			
peel force	162			

Table III sets out the physical properties of rolls of wet wipes and
 Table IV sets out the theoretical physical properties of rolls of wet wipes.

Table III - Coreless Roll Measurements and Calculations

Roll	Measured	Unwound	Calculated	Calculated	
Number	Diameter	Wet Thickness	Roll Density	Effective Thickness	Compression Factor
	(inches)	(mm)	(g/cm ³)	(mm)	(%)
1	2.77	NA	0.621	0.340	71%
2	2.83	0.41	0.595	0.355	74%
3	2.86	NA	0.583	0.362	76%
4	2.90	NA	0.567	0.373	78%
5	2.96	0.478	0.544	0.388	81%
6	2.86	NA	0.583	0.362	76%
7	2.98	NA	0.537	0.393	82%
8	2.88	NA	0.575	0.368	77%
9	2.94	NA	0.552	0.383	80%
10	2.86	0.448	0.583	0.362	76%
11	2.86	NA	0.583	0.362	76%
12	2.84	NA	0.591	0.357	74%
13	3.00	NA	0.530	0.399	83%
14	2.86	NA	0.583	0.362	76%
15	2.86	NA	0.583	0.362	76%

Initial sheet length = 5 inches

Initial sheet width = 4.125 inches

Number of sheets in roll = 90

Dry basesheets basis weight = 65 gsm

Target solution add-on = 225 %

Calculated roll weight = 253 grams

Assumed wet thickness prior to winding = 0.48 mm

Compression factor = calculated effective thickness (wound)/assumed wet thickness prior to winding

Calculated Roll Density = $\text{weight}/\pi d^2/4 \times \text{width}$ (calculated roll weight/ $\pi \cdot \text{measured diameter}^2/4 \cdot \text{initial sheet width}$)

Calculated Effective Thickness - calculated thickness of sheet in roll under pressure of winding.

Table IV - Theoretical Roll Density Possibilities

Dry		Calculated	Assumed	Assumed	Calculated	Calculated	
Basesheet	Solution	Roll	Pre-wound	Compression	Roll	Roll	
Weight	Add-on	Weight	Wet Thickness	Factor	Diameter	Density	Footnote
(gsm)	(%)	(grams)	(mm)	(%)	(inches)	(g/cm ³)	
65	225	253	0.48	1.300	3.75	0.34	(1)
65	225	253	0.48	1.150	3.53	0.38	
65	225	253	0.48	1.000	3.29	0.44	(2)
65	225	253	0.48	0.900	3.12	0.49	
65	225	253	0.48	0.800	2.94	0.55	
65	225	253	0.48	0.710	2.77	0.62	(3)
65	225	253	0.48	0.600	2.55	0.73	
65	225	253	0.48	0.500	2.33	0.88	(4)
65	225	253	0.48	0.440	2.18	1.00	
65	225	253	0.48	0.405	2.09	1.09	(5)
65	300	311	0.48	1.300	3.75	0.42	
65	300	311	0.48	1.150	3.53	0.47	
65	300	311	0.48	1.000	3.29	0.54	
65	300	311	0.48	0.900	3.12	0.60	
65	300	311	0.48	0.800	2.94	0.68	
65	300	311	0.48	0.700	2.75	0.77	
65	300	311	0.48	0.600	2.55	0.90	
65	300	311	0.48	0.500	2.33	1.08	
50	225	195	0.48	1.300	3.75	0.26	
50	225	195	0.48	1.150	3.53	0.29	
50	225	195	0.48	1.000	3.29	0.34	
50	225	195	0.48	0.800	2.94	0.42	
50	225	195	0.48	0.600	2.55	0.56	
50	225	195	0.48	0.400	2.08	0.85	
50	225	195	0.48	0.313	1.84	1.08	
50	150	150	0.48	1.300	3.75	0.20	(6)
50	150	150	0.48	1.000	3.29	0.26	
50	150	150	0.48	0.800	2.94	0.33	
50	150	150	0.48	0.600	2.55	0.43	
50	150	150	0.48	0.400	2.08	0.65	
50	150	150	0.48	0.300	1.80	0.87	
50	150	150	0.48	0.240	1.61	1.09	

Initial sheet length = 4.5 inches

Initial sheet width = 4.125 inches

Number of sheets in roll = 100

Total roll length = 37.5 feet

Footnotes - Table IV

- (1) A very loose roll, no compression, lots of air spaces, giving an overall low density
- (2) A roll that theoretically has no compression; this density and volume for roll vs. unrolled would be equal
- (3) A roll that has been produced, with this compression and roll density
- (4) Estimate of maximum compression achievable before product failure from in-wound tension exceeding strength of sheets or perforations
- (5) Physical limitation of the maximum density achievable based on incompressibility of water
- (6) Low end density achieved by a loose roll, low dry basis weight and low %Add-on

5 The dispensing force should be ideally considerably less than the detach force for a roll of perforated wipes. In this way it is assured that the wipes will be able to be pulled from, or removed from, the dispenser without inadvertently breaking the perforation. Thus, a dispensing force of from about 100g to about 600g is contemplated, a dispensing force of from about 150g to 250g is further contemplated and ideally a dispensing force of less than 200g is desirable, with forces based on g/4.25 inches (g/108.0 mm). Normalized, these forces are 23.5 g/inch (0.93 g/mm) to 141.2 g/inch (5.56 g/mm), 35.3 g/inch (1.39 g/mm) to 58.8 g/inch (2.32 g/mm), and 47.1 g/inch (1.85 g/mm).

10 Generally a peel force of from 80g - 300g (per 4.25 inches, 108.0 mm) is contemplated, although lower peel forces may be obtained with different types of wipe products. The cartridge adds minimal resistance to the roll as it is unwound. Thus, the force required to unwind a roll is not materially increased by the cartridge. The roll or stack of wipes may also be placed directly in the tray for dispensing, without the use of a cartridge.

15 Figure 19 shows the roll 34 as it is placed in a cartridge in a dispenser. The spiral line 38 is intended to represent the manner in which the roll is wound and depicts in that configuration a roll that is being unwound from the bottom. That figure further shows the relationship of the wiper 10 to the wet web. Figure 20 shows the roll 34 in cartridge 11, with spiral line 38 indicating the wind of the roll. This figure shows the relationship of the roll and the ribs 32. As can be seen from this figure the roll is lifted off of the side and bottom walls of the cartridge by rib 32. Thus, the amount of surface area of the roll that is in contact with the cartridge is reduced. This in turn reduces the drag that the roll experiences from friction with the cartridge when the roll is turned.

Figure 21 shows a portion of a cartridge 11, the lip 31 of the cartridge, and the side walls 39 and 40. The angle at which the cartridge is positioned has an effect on how well the dispenser will perform. The angle will have a tendency to increase or reduce the drag associated with pulling the wipe out. It will have an effect on the amount of siphoning, wicking or drying that may take place in the wet wipe. It may also have an effect on how the roll acts as it is unwound, becoming smaller and smaller in the cartridge. The angle of the cartridge can be measured by the angle that the lip 31 forms with a true vertical axis, shown as 42. For a dispenser system as shown in Figures 1-19, the angle 43 that the lip 31 has with a true vertical axis 42 should be from about 10 degrees to about 80 degrees, from about 20 degrees to about 70 degrees, at least greater than 20 degrees, at least smaller than 60 degrees, and preferably about 30 degrees.

Further the angle may be selected such that it balances the forces between the peel forces associated with unrolling the roll and the weight of the roll forcing it down against the ribs. Thus the wipe can be unrolled without having excessive movement of the roll within the cartridge, which in turn overcomes the tendency of the roll to translate toward the gap and bind or jam the dispenser. Additionally, the selection of the angle may play a role in reducing the drying of the wet wipe. As the angle 43 is increased the difference between the height of the top of the roll and the tail is decreased, thus decreasing any siphoning driving force.

Figures 22 through 25 show various views of an example of a cover. In this example the cover 7 has cover mounts 29, a recess 5 for forming part of a finger hold indentation, an inside rim 33, which has a top inside rim section 45 and side inside rim sections 46 (of which only one can be seen in Figure 24), leg sections 72, and posts 44. In this example the posts are used to connect the wiper to the cover.

Figures 26 through 28 show an example of a tray 3a. In this example the tray has an opening 15a with 3 recesses on both sides. The tray has guides that are rollers 47.

In a further example of the tray, the tray is fixed to the housing. This may be accomplished by having the housing and tray being made out of a single piece of material or having the housing and tray joined together by a permanent bonding means, such as welding, heat bonding or gluing. In yet a further example the tray may be attached to the housing so that it cannot rotate with respect to the housing, yet still may be removable.

Figure 29 shows the rollers 47 used in the tray 3a shown in Figure 26-28. The rollers have raised surfaces 67 and lowered surfaces 68. The raised and lowered surfaces of the rollers as well as any guide may also be a ridge or a rim. As the raised or lowered surfaces become narrower, i.e., become sharper, care must be taken not to cut the wet web.

Wiper blades may be made out of any flexible material, such as thermoplastic elastomers, foam, sponge, plastic, or rubber having a shore A durometer hardness value ranging about 0 to 80, from about 15 to about 70 and preferably from about 30 to about 60. It is further preferred that the wiper blades be made from a material that will form a good moisture and contamination barrier. Examples of preferred types of material are SANTOPRENE®, Kraton®, silicone, or styrene ethylene/butylene styrene (SEBS). The wiper blade is designed to function with the guides and the tray and to a limited extent the lip of the cartridge. Depending on the placement of the wiper, it could have greater or lesser interaction with these components of the dispensing system. The gap between the end of the wiper blade and the tray may be varied depending upon the thickness of the wet wipes and how much drag is needed for the dispensing system to function as desired. The wiper blade can help to hold the tail of the wipe in place and thus keep the tail from falling back through the gap and into the cartridge. The wiper blade material has a Gurley stiffness value (ASTM D 6125-97) between about 100 mg and 8000 mg, preferably between about 200 mg and 6000 mg, and more preferably between about 400 mg and 3000 mg.

The force applied to the wipe by the wiper blade when pulling the wipe from the dispenser should not be greater than the tensile strength of the wipe in the non-perforated region and not greater than the perforation tensile

strength of a perforated wipe. If the wipes are made such that they are dry in storage and become wet during use, the blade may be configured to exert pressure on the wipe. In this case, the dispensing of a sheet or sheets causes sufficient shear to be applied to the wipe to permit the moisture to be released. For example, this force or shear may be sufficient to cause microcapsules of fluid to burst or may be sufficient to rupture a protective emulsion which contains the fluid.

Figures 32 through 37 show an example of a wiper assembly. In this example the wiper assembly 10 comprises a chassis 48, and a blade 50 that has fingers 49. In this example the fingers are designed to cooperate with the lowered surfaces 16b (Figure 2A) of the guides on the housing. In this example the blade is made of SANTOPRENE® and the chassis is made of polypropylene.

Figures 38 through 39 show an example of a wiper blade. In this example the wiper blade is formed of a single piece (see Figure 38) of material that is folded over to form the wiper blade (see Figure 39). The wiper blade has raised portions 51 that reduce the amount of surface area of the wiper blade that contacts the sheet and raised areas 53 and lowered areas 52 that cooperate with the raised and lowered areas of the guides.

Figures 62 to 65 illustrate dispensers 1 that have a rounded member 95 or rounded ridges 96. These components are shown as being part of or attached to the wiper blade assembly 99 and adjacent the wiper blade 74. These components prevent or reduce the tendency of the roll from binding in the gap as the size of the roll decreases.

Figures 57 through 61 show an example of a wiper assembly. In this example the wiper comprises a chassis 73, and a wiper blade 74 (74a shows sections of blade engaging and protruding through the chassis) that has fingers 75. In this example the fingers are designed to cooperate with the lowered surfaces of the guides 16 in the dispenser. In this example the blade is made of SANTOPRENE® and the chassis is made of polypropylene. This embodiment contains raised or thicker areas 97 of the wiper. These raised areas cooperate with the guides 16 on the tray.

Figures 40 through 41 show an example of a roller bar for toilet tissue. This example comprises a first roller housing 80, a second roller housing 81 and a spring 82. Figures 55 through 56 show other embodiments of the dispenser.

5 Figures 42 through 45 show an example of a mounting assembly. This mounting assembly comprises slide arms 55 and 56, housings 57 and 58, end openings 59, and springs 61. The slide arms have stops 60 that cooperate with stops 83 to limit the maximum longitudinal extension of the slide arms. The mounting assembly has a third housing 84 that has tabs 63 that
10 cooperate with openings 62 to secure the housings 57 and 58 to housing 84. Housing 84 further has a threaded passage 64 for receipt of a screw. Figure 44 shows the mounting assembly with the slide arms in a retracted position, while Figure 45 shows the mounting assembly with the slide arms in an extended position. In one embodiment, the length of the mounting assembly in the retracted position is about 3.5 inches (88.9 mm), and the length of the mounting assembly in the extended position the length is about 8 inches
15 (203.2 mm). Preferably the length of the mounting assembly in the retracted position is about 5 inches (127.0 mm), and the length of the mounting assembly in the extended position the length is about 6.5 inches (165.1 mm). The three housing design may also be simplified into a two housing embodiment or a single housing embodiment. In the two housing embodiment, top and bottom or side and side halves are fixed together to hold the spring and slide arms.

20 The assembly is held in place by having the ends of the slide arms positioned in holes in the object that the dispenser is to be attached to, for example the holes in a toilet paper dispenser mounted into a wall. The springs keep the slide arms extended and thus hold them in the holes. A screw is then inserted through the dispenser and the passage 64 and tightened down, forcing the end engagement surfaces 90 against the wall of
25 the holes in the toilet tissue dispenser.
30 Figure 66 depicts a conventional bath tissue holder 85 that is the partially recessed type, having posts 86. Figure 67 depicts a conventional

bath tissue holder 85 that is not recessed and having posts 86 and a roller 6. Figure 68 illustrates the holder of Figure 67 with the roller removed and a mounting assembly 8 engaged with the post 86. In actual use the mounting assembly would be joined with a dispenser, as shown for example in Figure 2.

5 The mounting assembly should be made out of material that is strong enough to withstand the forces that are placed on it to hold the dispenser in place. The material should have enough strength to withstand the forces that the screw will place on the treaded passage. Examples of materials that may provide these features and be used to make the mounting assembly are 15%
10 or more glass filled Pbt, ABS or any material having similar strength properties.

 Figures 46 to 50 show an example of a screw 9 that cooperates with a mounting device, such as the example shown in Figures 42 – 45. The screw
15 should be made of material that meets the same strength requirements as set out for the mounting assembly. In this example the screw has a thread design that requires 6 turns to move it 1 inch (25.4 mm). Standard ACME
conventional screw threads require 23 turns to move it 1 inch (25.4 mm). This
thread design provides greater ease for the user to attach the dispenser
because it requires less turns of the screw to do so. In this example the
20 screw additionally has a large head, with a groove 65 and grips 66. The groove can fit a coin or screwdriver. The larger head of the screw and the
groove, however, are not necessary, although they may be preferred to
provide greater ease to install the dispenser system. The screw may further
be provided with a lock nut or jam nut near the head to prevent loosening of
25 the screw after it is tightened.

 Alternative mountings may also be employed. These mountings may be fixed or removable. They may include by way of example such fastening systems as cable ties, wing nuts, anchor bolts, click and grooves and snap
and lock mechanisms.

30 Figures 51 – 53 show an example of a cartridge. In this example the cartridge has protrusions 69 on its side walls.

Figure 54 shows an example of a package of cartridges. In use this package would be filled with rolls of wet wipes, one for each cartridge. The cartridges would then be sealed, by placing a totally or partially removable cover over the lips 31. The seal is preferably moisture and bacterial resistant.

5 The consumer would then purchase the package and remove a cartridge, open the dispenser and place the cartridge in the dispenser. The top of the cartridge or the slit in the cover can be removed either before placing the cartridge in the dispenser or after it is inserted in the dispenser. The end of the roll of wet wipes is then pulled out and over the tray and guides and the

10 cover is then closed, thus providing an efficient system for dispensing wet wipes.

WE CLAIM:

1. A method for providing refills for a wet wipes dispenser comprising:
 - obtaining a wet wipes cartridge;
 - determining the measurements of the obtained cartridge;
 - determining the price of the obtained cartridge;
 - manufacturing a cartridge based on the measurements of the obtained cartridge;
 - putting a roll of wet wipes in the manufactured cartridge; and,
 - determining a price for the manufactured cartridge that is less than or equal to the price of the obtained cartridge.
2. The method of claim 1, wherein the price of the obtained cartridge is the retail price.
3. The method of claim 1, wherein the price of the manufactured cartridge is the retail price.
4. The method of claim 1, comprising advertising the price of the manufactured cartridge.
5. The method of claim 1, wherein the price of the manufactured cartridge is below the price of the obtained cartridge.
6. The method of claim 1, wherein the price of the manufactured cartridge and the obtained cartridge are retail prices.
7. The method of claims 1, 2, 3, 4, 5, or 6 comprising providing instructions on how to refill a dispenser with the manufactured cartridge.
8. A method for providing refills for a wet wipes dispenser comprising:
 - obtaining a wet wipes dispenser;
 - determining the dimensions of the obtained dispenser;

determining the price of a wet wipes cartridges offered for sale for use with the obtained dispenser;

determining the size of a roll of wet wipes that would fit in the obtained dispenser;

5 manufacturing a roll of wet wipes having the determined size; and,

establishing a price for the manufactured roll that is less than or equal to the price of the cartridge.

10 9. The method of claim 8, wherein the price of the cartridge is the retail price.

10 10. The method of claim 8, wherein the price of the manufactured roll is the retail price.

11. The method of claim 8, comprising advertising the price of the manufactured roll.

15 12. The method of claim 8, wherein the price of the manufactured roll is below the price of the cartridge.

13. The method of claim 8, wherein the price of the manufactured roll and the cartridge are retail prices.

20 14. The method of claim 8, comprising determining the dimensions of the cartridge and roll of wet wipes in the cartridge and using these determined dimensions to determine the size of the manufactured roll.

15. The method of claims 8, 9, 10, 11, 12, 13, or 14 comprising providing instructions on how to refill a dispenser with the manufactured roll.

25 16. A method for providing refills for a wet wipes dispenser comprising:

obtaining a wet wipes cartridge that was manufactured by Kimberly—Clark;

determining the measurements of a obtained cartridge;

determining the price of the obtained cartridge;
manufacturing a cartridge having similar dimensions to the
obtained cartridge;
providing a roll of wet wipes in the cartridge; and,
5 pricing the manufactured cartridge at or below the price of the
obtained cartridge.

17. The method of claim 16, wherein the obtained cartridge has a
roll of wet wipes therein.

10 18. The method of claim 16, wherein the price of the obtained
cartridge is the retail price.

19. The method of claim 16, wherein the price of the manufactured
cartridge is the retail price.

20. The method of claim 16, comprising advertising the price of the
manufactured cartridge.

15 21. The method of claim 16, wherein the price of the manufactured
cartridge is below the price of the obtained cartridge.

22. The method of claim 16, wherein the price of the manufactured
cartridge and the obtained cartridge are retail prices.

20 23. The method of claims 16, 17, 18, 19, 20, 21 or 23 comprising
providing instructions on how to refill a dispenser with the manufactured
cartridge.

25 24. A method for providing refills for a wet wipes dispenser
comprising:
purchasing a wet wipes cartridge from a retail distribution
source;
determining the dimensions of the obtained cartridge;
determining the price paid to purchase the obtained cartridge;

manufacturing a cartridge based on the dimensions of the
obtained cartridge;

providing a roll of wet wipes in the manufactured cartridge;

establishing a price for the manufactured cartridge that is equal

5 to or less than the price of the obtained cartridge, and,

providing instruction to place the cartridge in a dispenser.

25. A method for providing refills for a wet wipes dispenser
comprising:

obtaining a cartridge for a wet wipes dispenser;

10 determining the dimensions of the cartridge;

determining the retail price charged for the cartridge;

determining that the cartridge is asymmetrical;

determining that the cartridge has two protrusions on one side

and one protrusion on the other;

15 determining the dimensions of the protrusions;

determining the relative locations of the protrusions with respect
to the dimensions of the cartridge;

manufacturing a cartridge having substantially the same
dimensions, protrusions, and placement of protrusions as the obtained
20 cartridge;

placing wet wipes in the manufactured cartridge;

providing a bacterial resistant seal to the manufactured cartridge
containing the wet wipes; and,

25 setting the price of the manufactured cartridge such that its
retail price can be less than or equal to the retail price of the obtained
cartridge.

26. A method for providing refills for a wet wipes dispenser
comprising:

obtaining a Kimberly-Clark wet wipes cartridge;

30 determining the measurements of the obtained cartridge;

determining a price charged for the obtained cartridge;

determining the dimensions of a cartridge that would be interchangeable with the obtained cartridge;

making a cartridge to the determined interchangeable dimensions;

5 providing a roll of wet wipes in the interchangeable cartridge;
providing instruction to place the interchangeable cartridge in a dispenser; and,

10 setting the price of the interchangeable cartridge so that the price of the interchangeable cartridge can be less than or equal to the obtained cartridge.

27. The method of claim 26, wherein the price of the obtained cartridge is the retail price.

28. The method of claim 26, wherein the price of the interchangeable cartridge is the retail price.

15 29. The method of claim 26, comprising advertising the price of the interchangeable cartridge.

30. The method of claim 26, wherein the price of the interchangeable cartridge is below the price of the obtained cartridge.

20 31. The method of claim 26, wherein the price of the interchangeable cartridge and the obtained cartridge are retail prices.

32. A method for providing refills for a wet wipes dispenser comprising:

25 obtaining a coreless roll of wet wipes;
determining the measurements of a coreless roll of wet wipes;
determining the retail price charged for the obtained roll;
manufacturing a roll of wet wipes having similar dimensions to the obtained roll;
sealing the manufactured roll of wet wipes in a bacteria resistant package;

providing instruction to place the roll in a dispenser; and,
setting the price of the manufactured roll so that the price of the
manufactured roll is less than or equal to the retail price of the obtained roll.

5 33. A method for providing refills for a wet wipes dispenser
 comprising:

 obtaining a wet wipes cartridge;
 determining the measurements of the obtained cartridge;
 providing a cartridge based on the measurements of the
10 obtained cartridge;
 putting a plurality of wet wipes in the provided cartridge; and,
 offering the provided cartridge and wet wipes for sale.

 34. A method for providing refills for a wet wipes dispenser
 comprising:
 obtaining a wet wipes dispenser;
15 determining the dimensions of the obtained dispenser;
 determining the size of a roll of wet wipes that would fit in the
 obtained dispenser;
 providing a roll of wet wipes having the determined size; and,
 offering the provided roll of wet wipes for sale.

20 35. The method of claim 34, comprising determining the dimensions
 of the cartridge and roll of wet wipes in the cartridge and using these
 determined dimensions to determine to size of the provided roll.

 36. The method of claim 34, comprising providing instructions on
 how to refill a dispenser with the provided roll.

25 37. A method for providing refills for a wet wipes dispenser
 comprising:
 obtaining a wet wipes cartridge that was manufactured by
 Kimberly—Clark;
 determining the measurements of a obtained cartridge;

providing a cartridge having similar dimensions to the obtained cartridge;

providing a roll of wet wipes in the cartridge; and,
offering the provided cartridge and wet wipes for sale.

5 38. The method of claim 37, wherein the obtained cartridge has a roll of wet wipes therein.

39. The method of claims 33, 37 or 38 comprising providing instructions on how to refill a dispenser with the provided cartridge.

10 40. A method for providing refills for a wet wipes dispenser comprising:
 purchasing a wet wipes cartridge from a retail distribution source;
 determining the dimensions of the obtained cartridge;
 providing a cartridge based on the dimensions of the obtained
15. cartridge;
 providing a roll of wet wipes in the provided cartridge;
 providing instruction to place the cartridge in a dispenser; and
 offering the provided cartridge and wet wipes for sale.

20 41. A method for providing refills for a wet wipes dispenser comprising:
 obtaining a cartridge for a wet wipes dispenser;
 determining the dimensions of the cartridge;
 determining that the cartridge is asymmetrical;
 determining that the cartridge has two protrusions on one side
25 and one protrusion on the other;
 determining the dimensions of the protrusions;
 determining the relative locations of the protrusions with respect to the dimensions of the cartridge;
 providing a cartridge having substantially the same dimensions,
30 protrusions, and placement of protrusions as the obtained cartridge;

placing wet wipes in the provided cartridge;
providing a bacterial resistant seal to the manufactured cartridge
containing the wet wipes; and,
offering the provided cartridge for sale.

5 42. A method for providing refills for a wet wipes dispenser
comprising:

obtaining a Kimberly-Clark wet wipes cartridge;
determining the measurements of the obtained cartridge;
determining the dimensions of a cartridge that would be
10 interchangeable with the obtained cartridge;
providing a cartridge to the determined interchangeable
dimensions;
providing a roll of wet wipes in the interchangeable cartridge;
providing instruction to place the interchangeable cartridge in a
15 dispenser; and,
offering the interchangeable cartridge and wet wipes for sale.

 43. A method for providing refills for a wet wipes dispenser
comprising:
obtaining a coreless roll of wet wipes;
20 determining the measurements of a coreless roll of wet wipes;
providing a roll of wet wipes having similar dimensions to the
obtained roll;
sealing the provided roll of wet wipes in a bacteria resistant
package;
25 providing instruction to place the roll in a dispenser; and,
offering the provided roll of wet wipes for sale.

 44. A method for providing refills for a wet wipes dispenser
comprising:
obtaining a wet wipes cartridge;
30 determining the measurements of the obtained cartridge;

determining the price of the obtained cartridge at a given retail outlet;

providing wet wipes in a package, the provided package having measurements based on the measurements of the obtained cartridge; and,

5 establishing a price for the provided package that is less than or equal to the price of the obtained cartridge at the given retail outlet.

45. The method of claim 44, wherein the establishing a price comprises providing coupons to the consumer.

10 46. The method of claim 44, further comprising providing free samples to the consumer.

47. The method of claim 44, wherein the establishing a price comprises offering discounts to a buyer who is not the consumer.

48. The method of claim 47, wherein the buyer is the retail outlet.

15 49. The method of claim 47, wherein the offering discounts comprises providing funding for advertising of the package.

50. The method of claim 44, wherein the provided package contains fewer sheets of wipes than contained in the obtained cartridge.

20 51. The method of claims 44, 45, 46, 47, 48, 49 or 50, comprising providing instructions on how to refill a dispenser with the package.

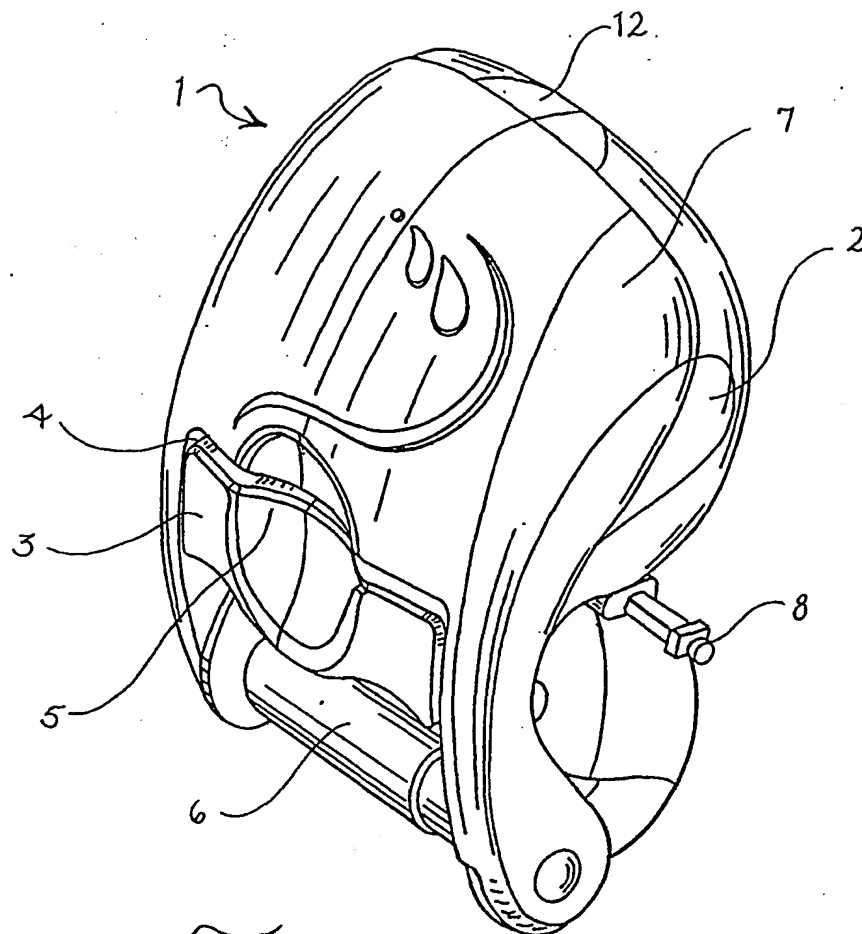


Fig. 1

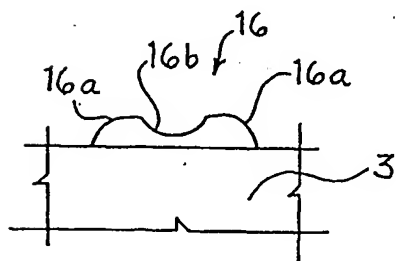


Fig. 2A

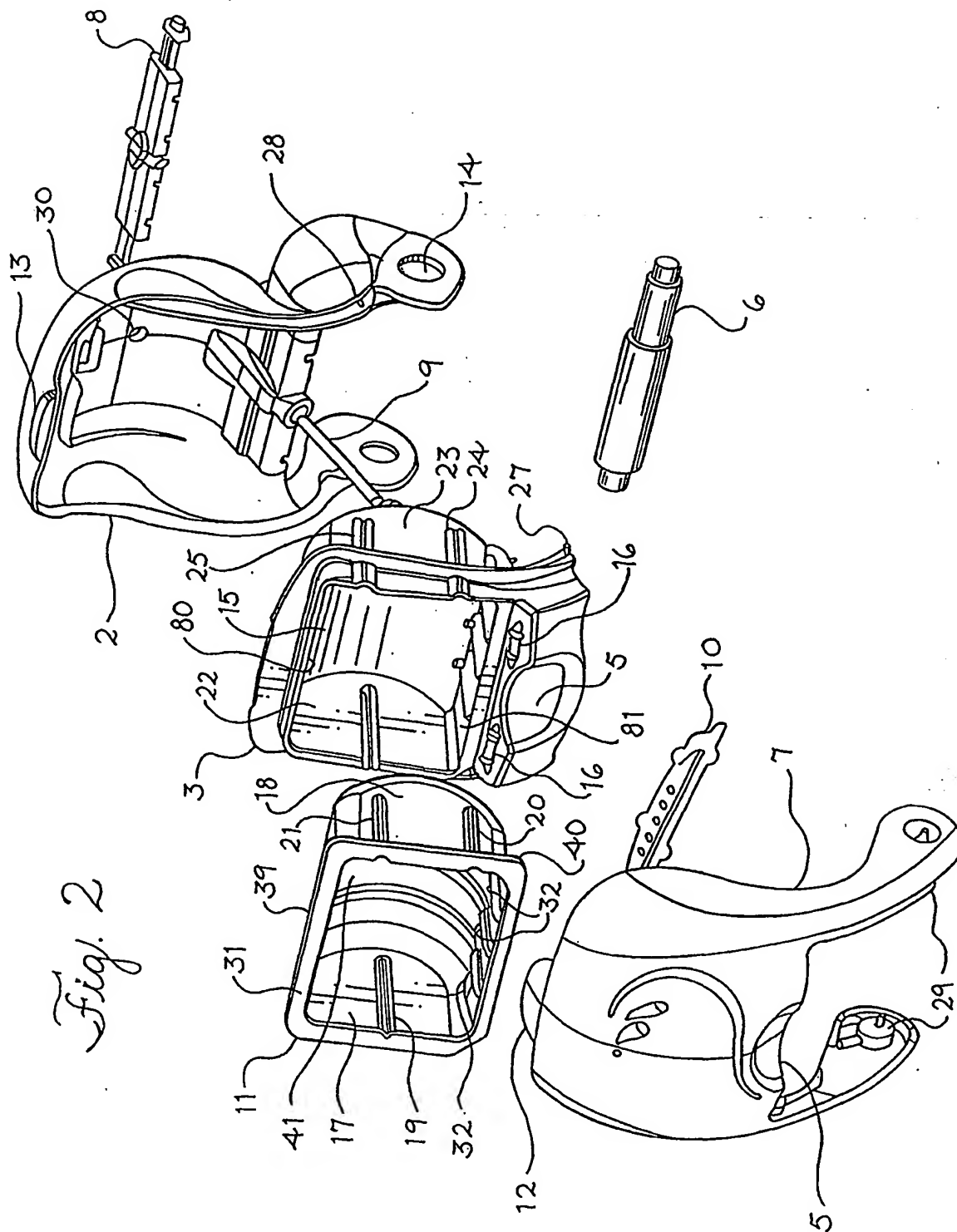
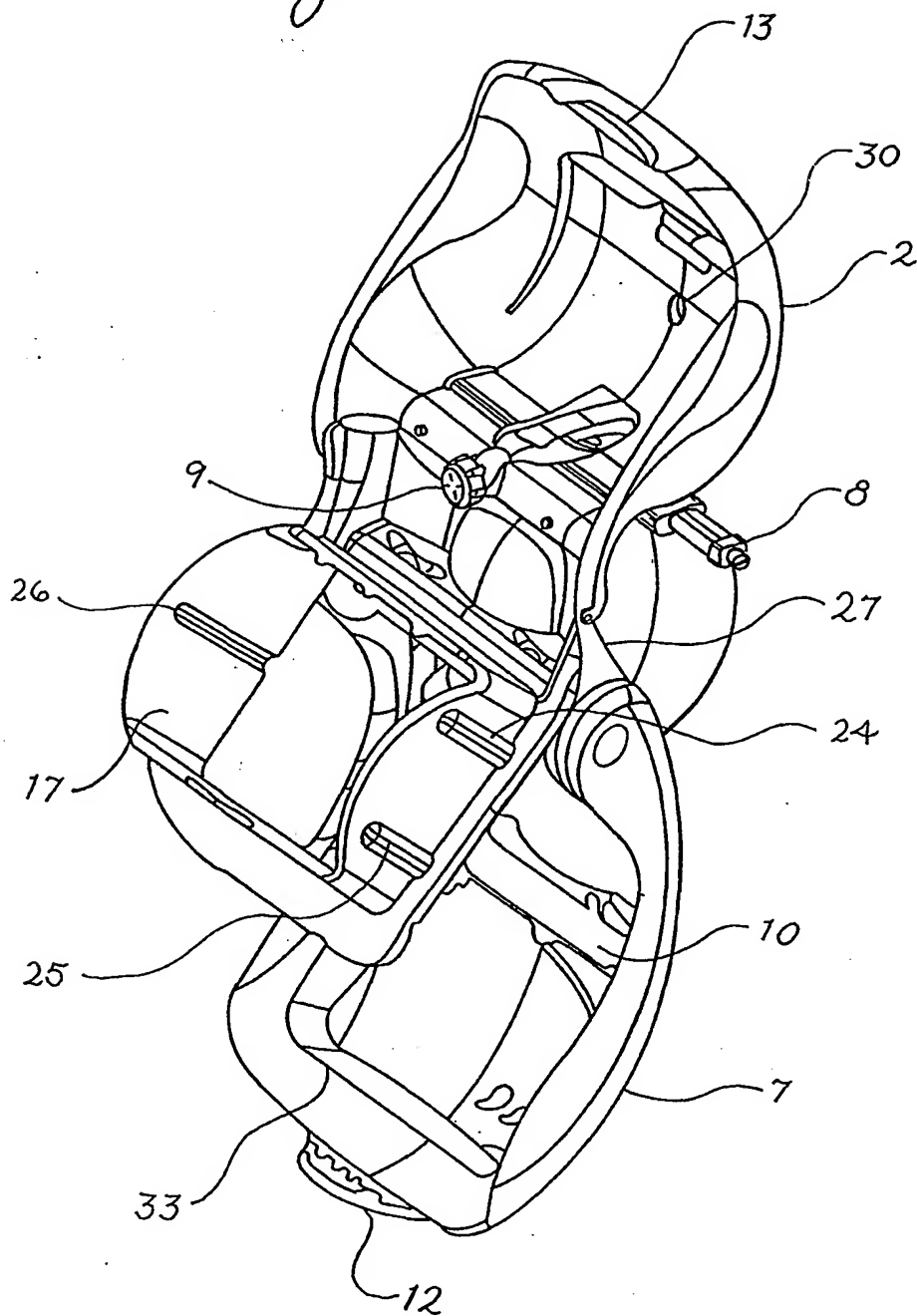


Fig. 2

Fig 3

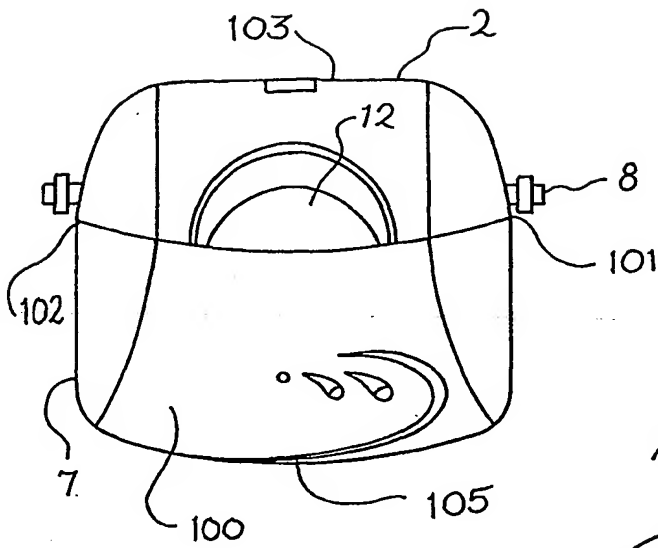


Fig. 4

Fig. 5

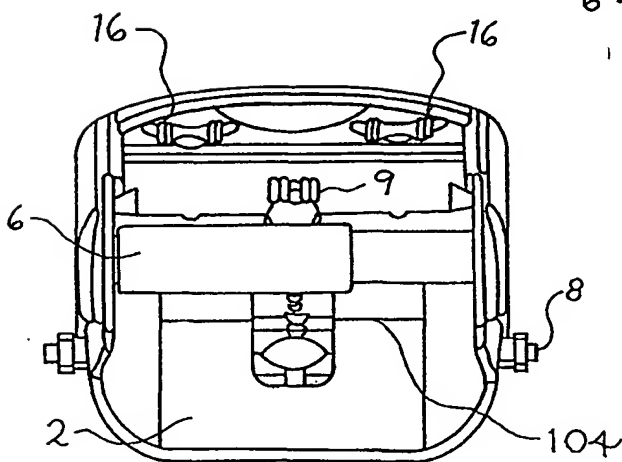
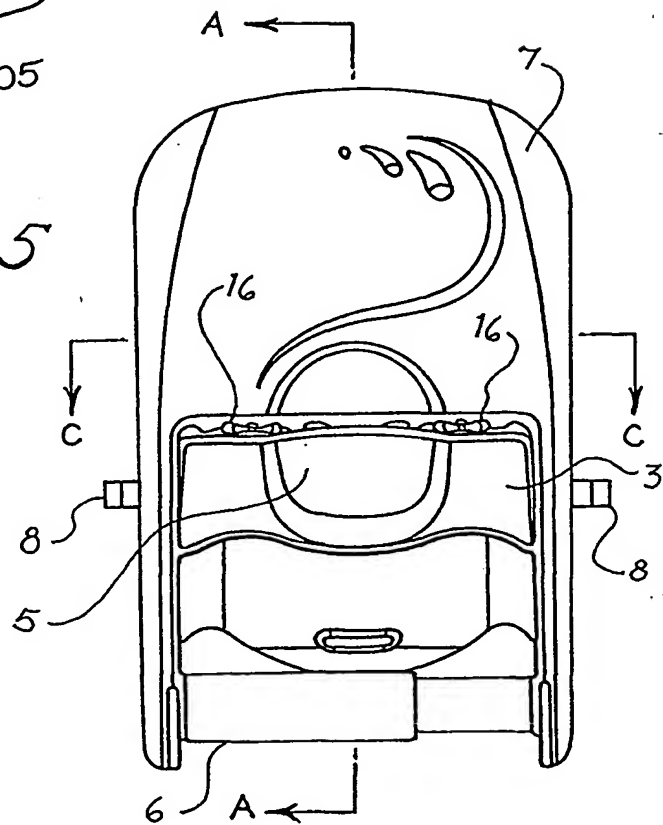


Fig. 6

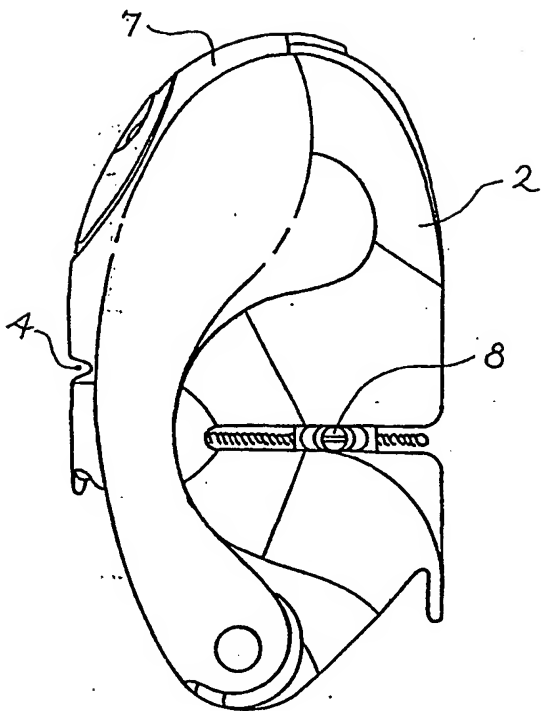


Fig. 7

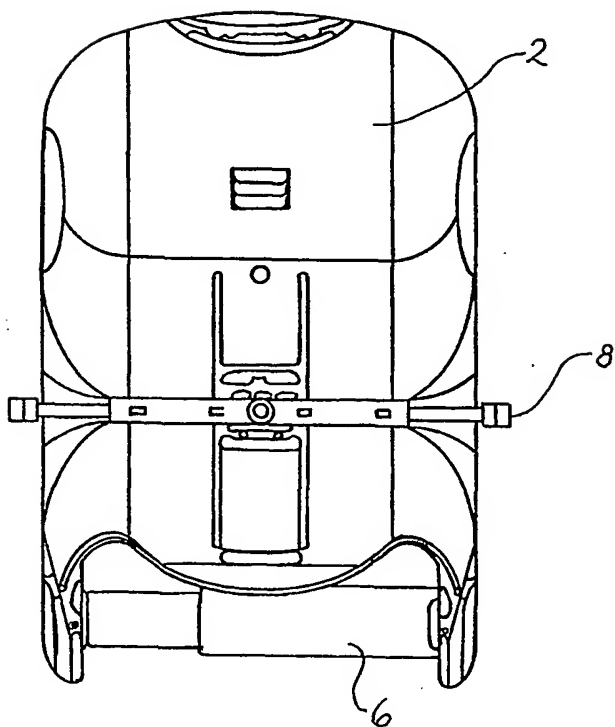


Fig. 8

Fig. 10

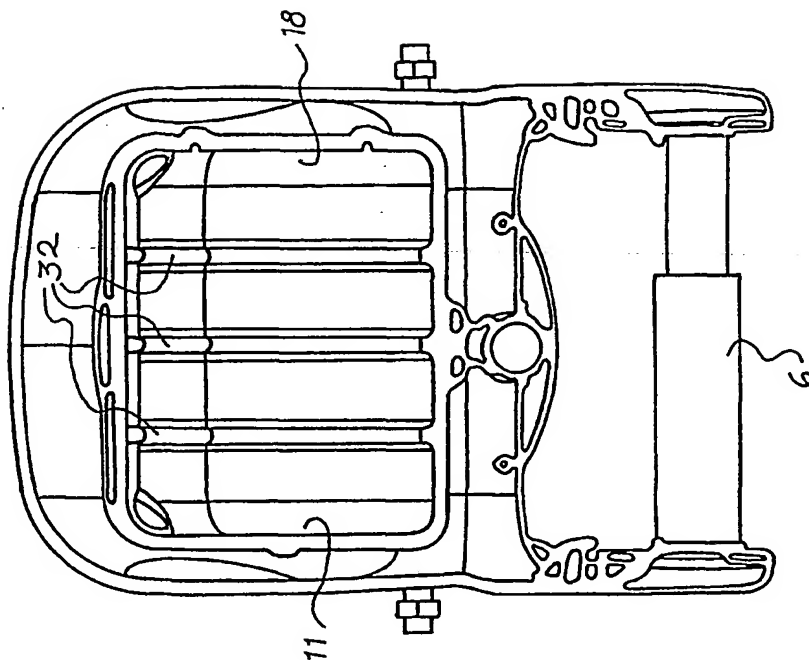


Fig. 9

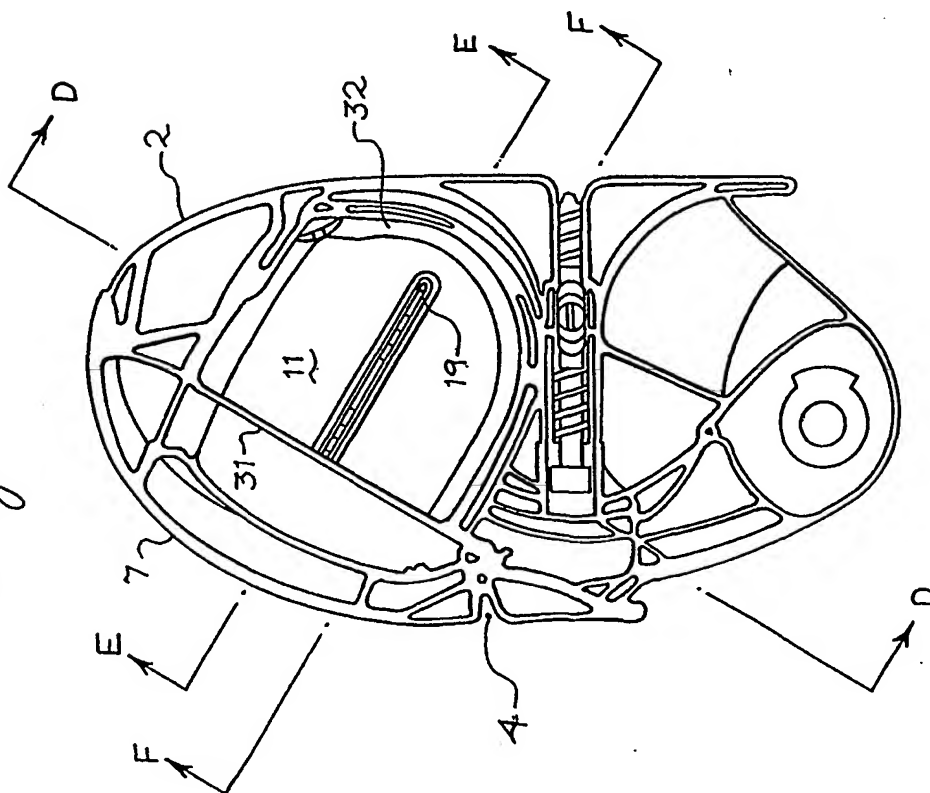


Fig. 11

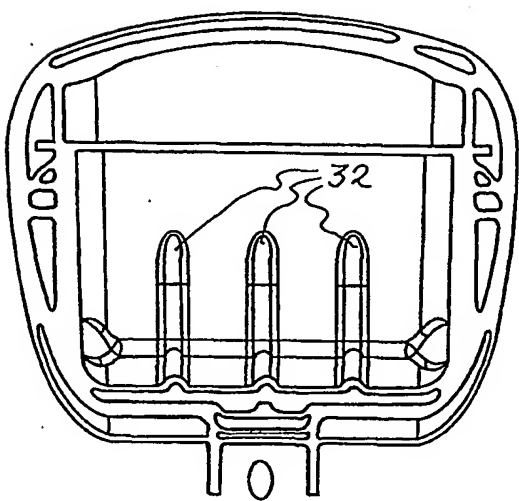
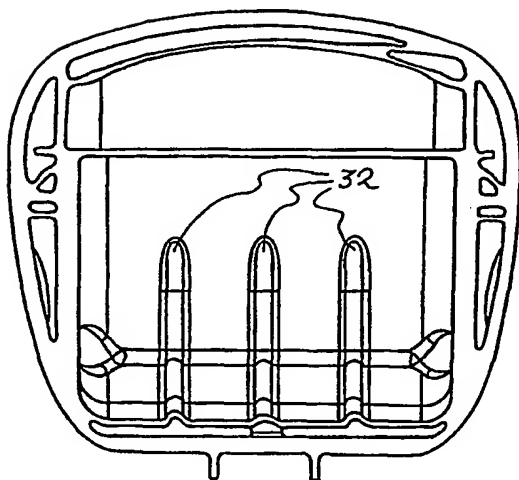


Fig. 12

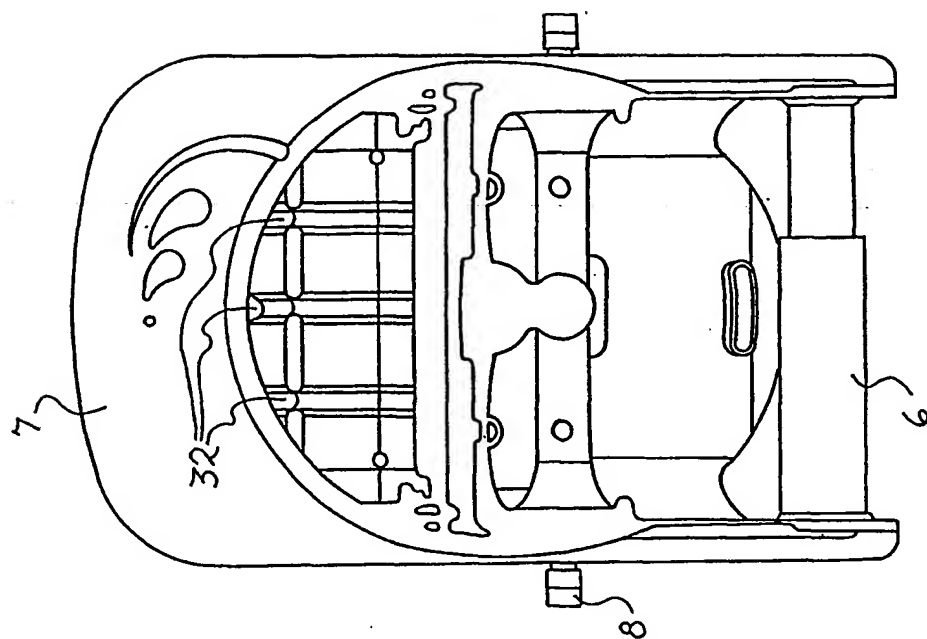


Fig. 14

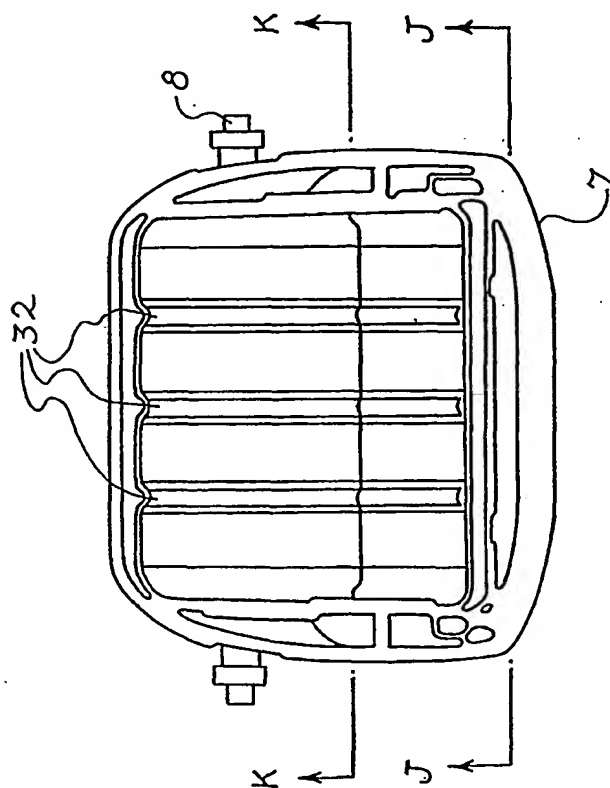
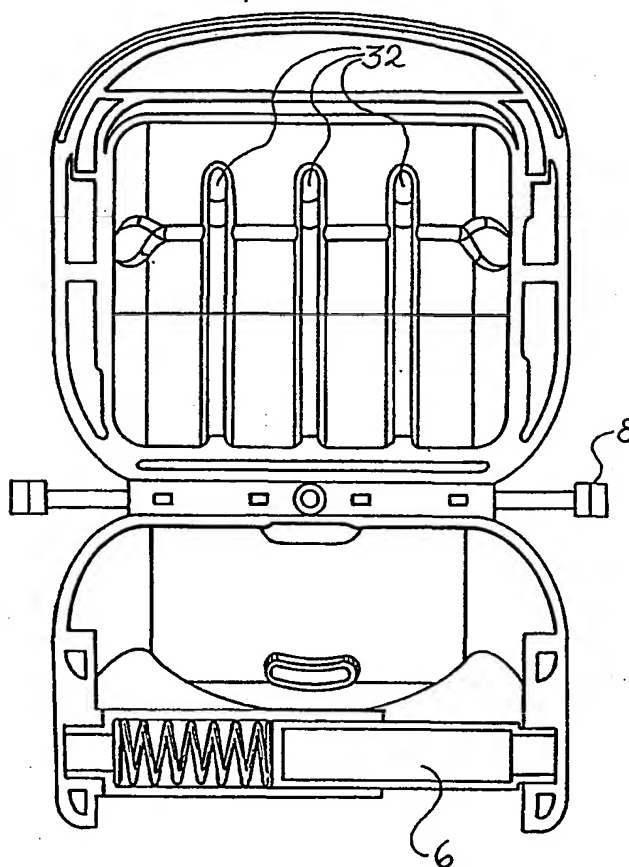
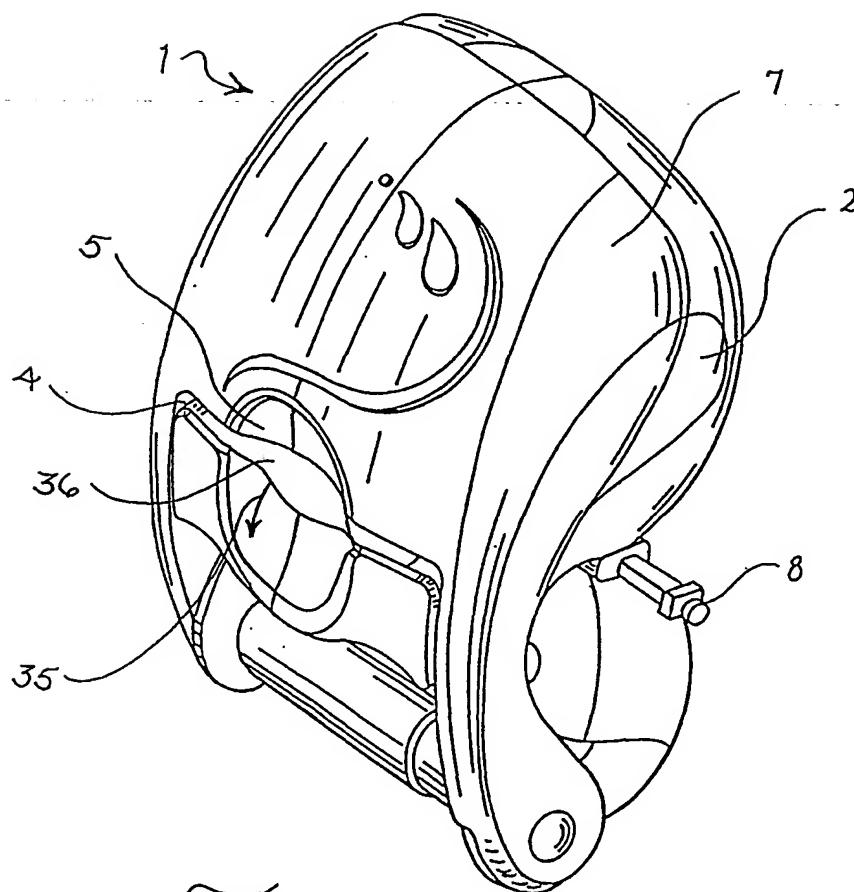
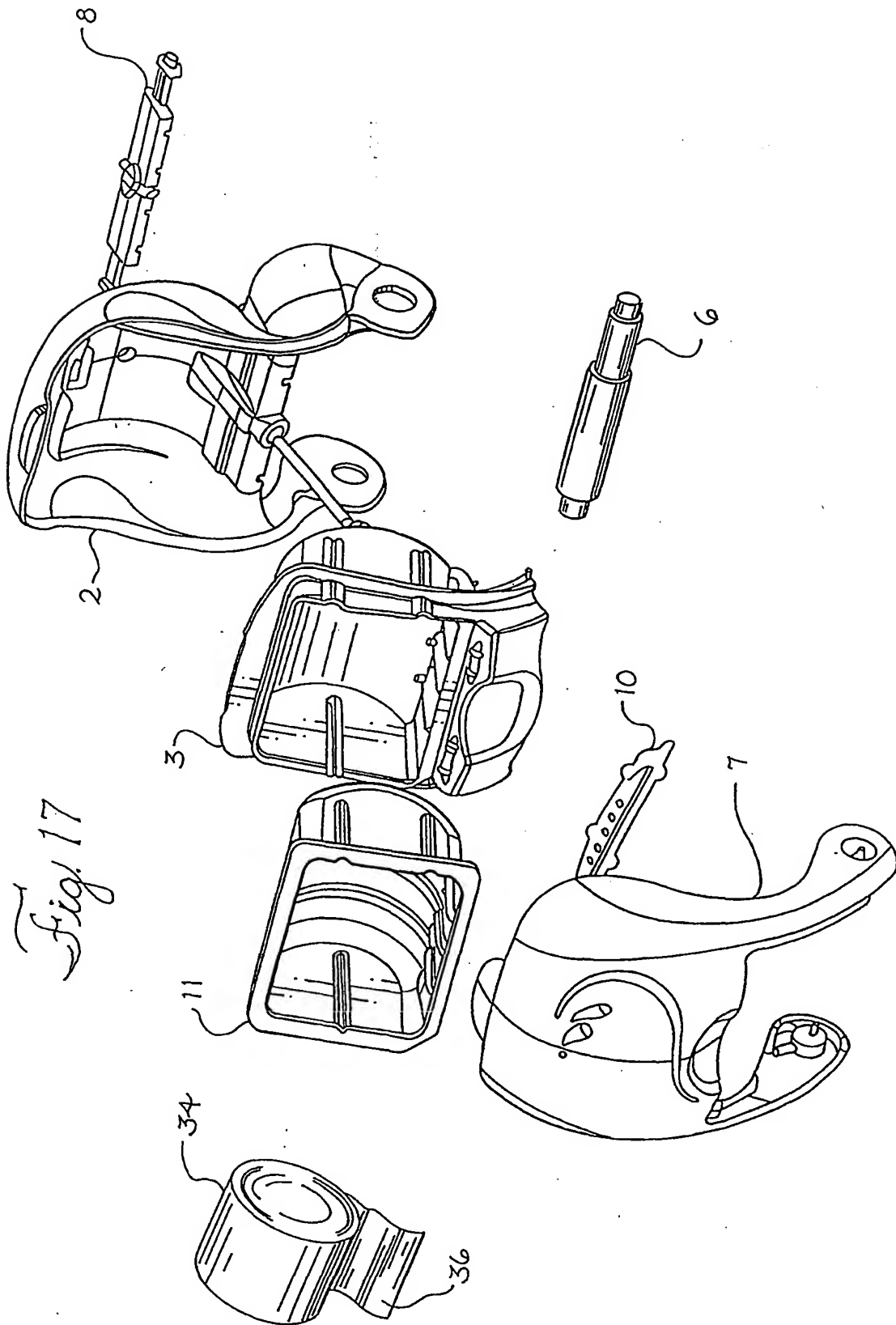


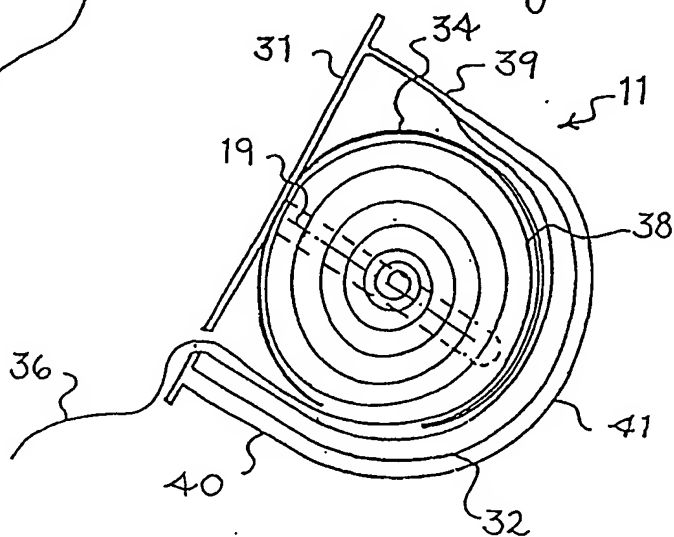
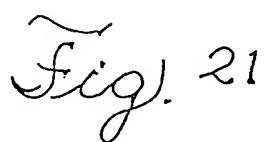
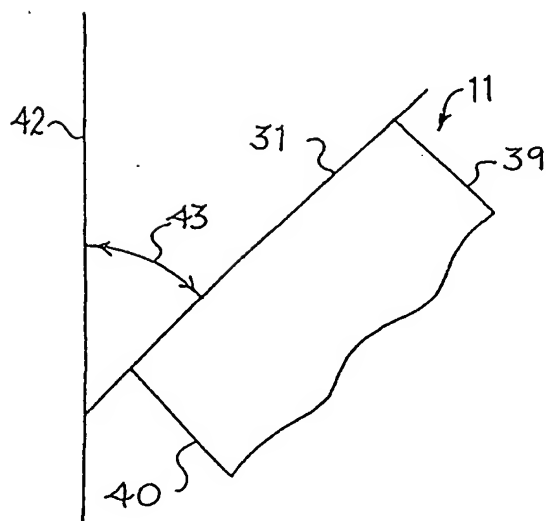
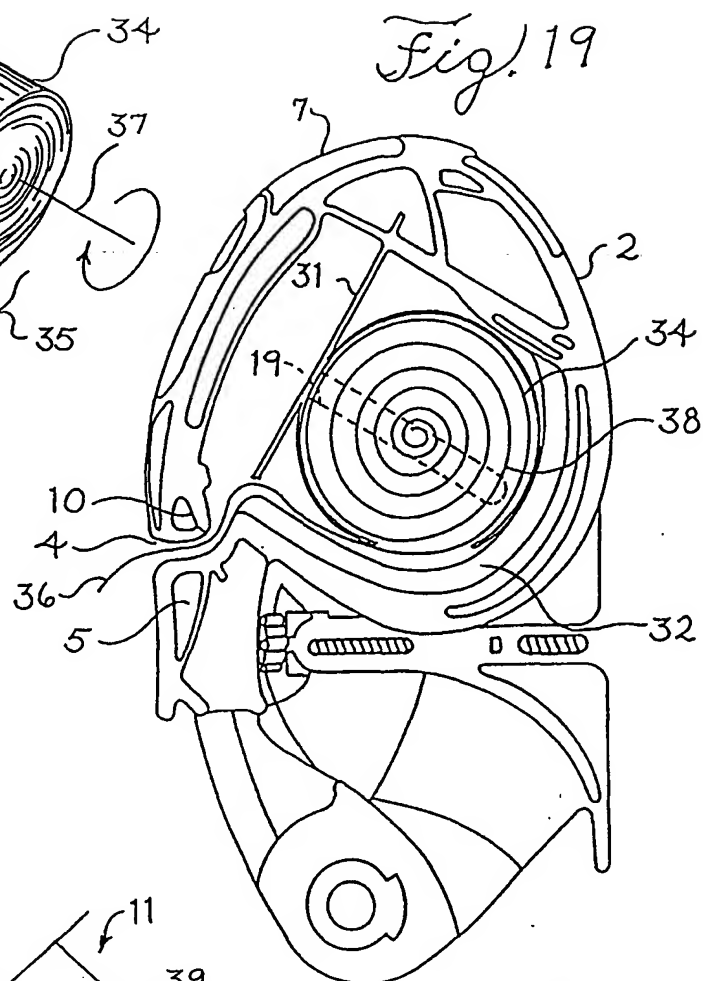
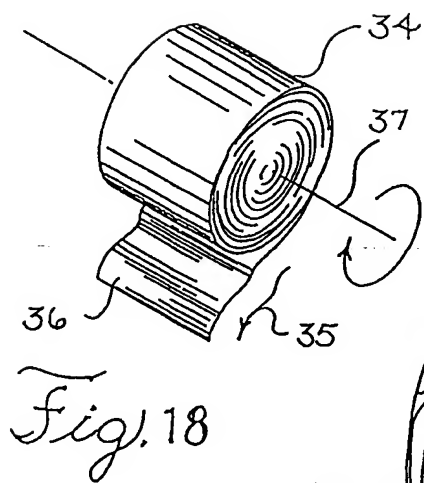
Fig. 13

Fig. 15



*Fig. 16*





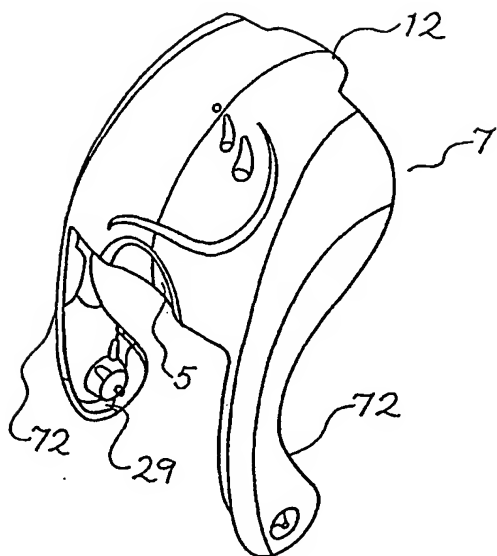


Fig. 22

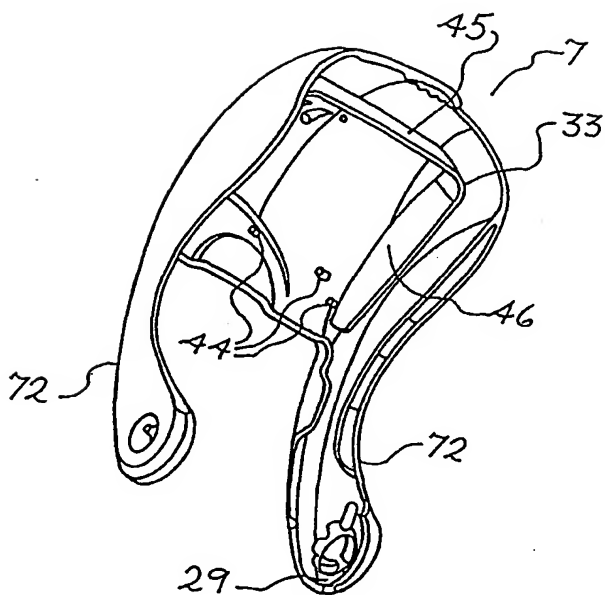


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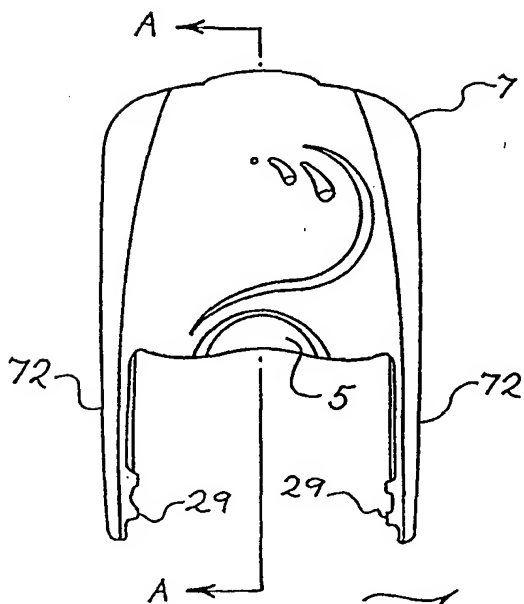


Fig. 23

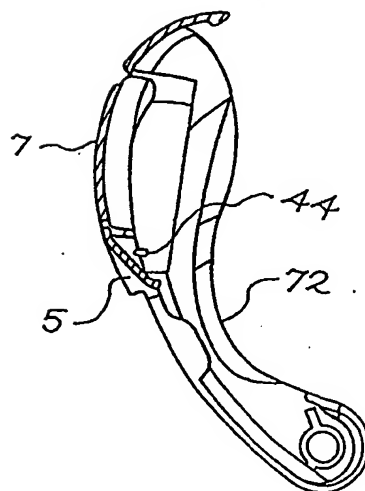
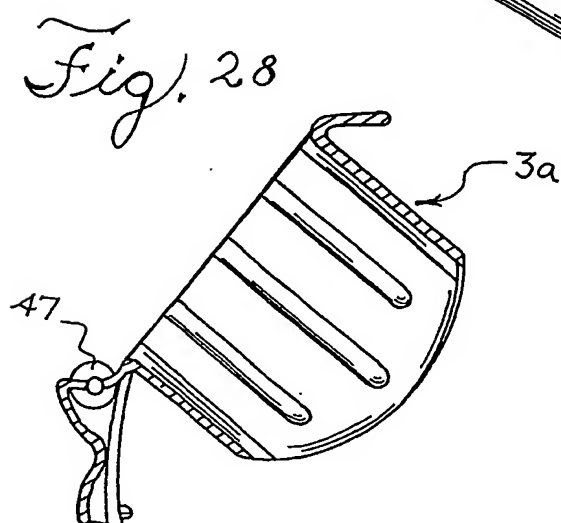
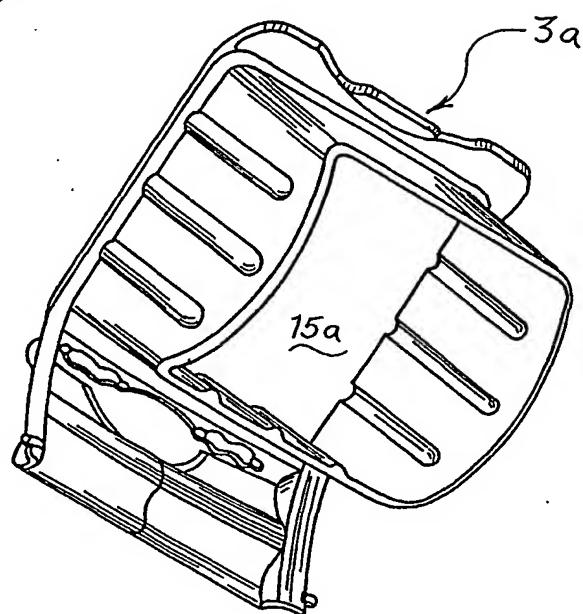
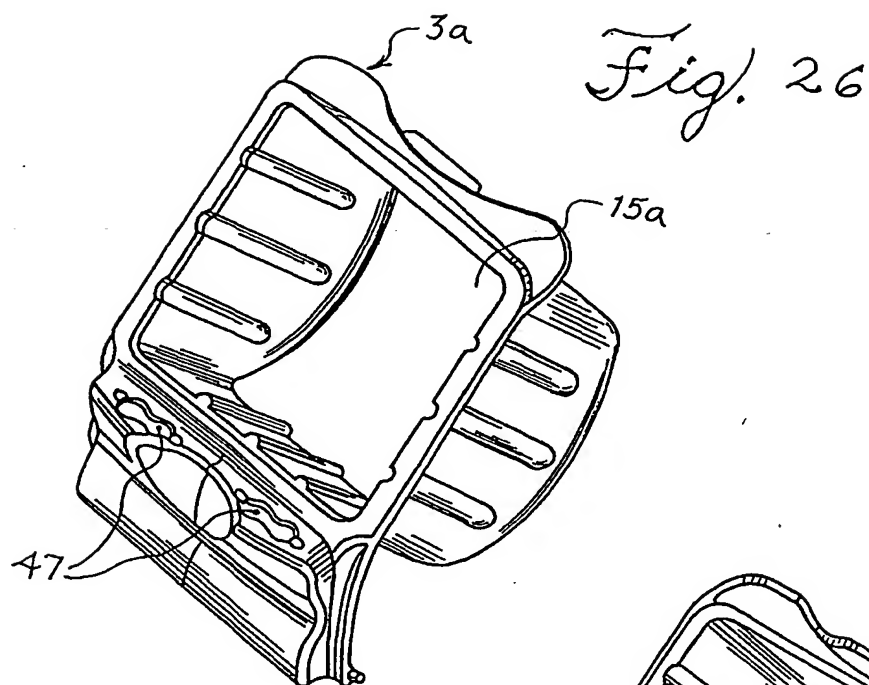


Fig. 25



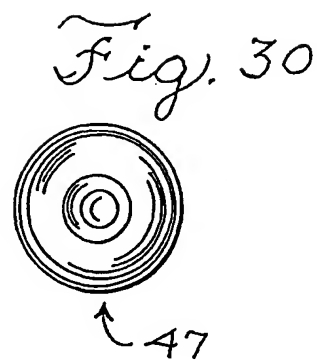
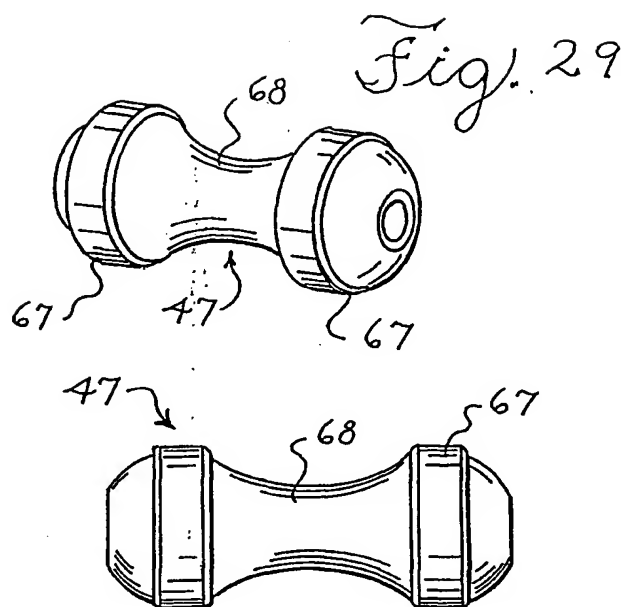


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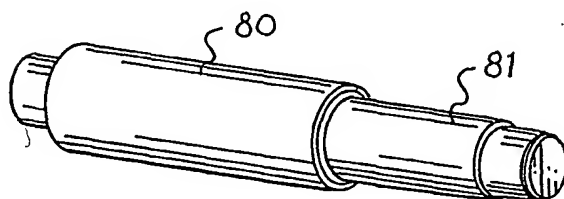


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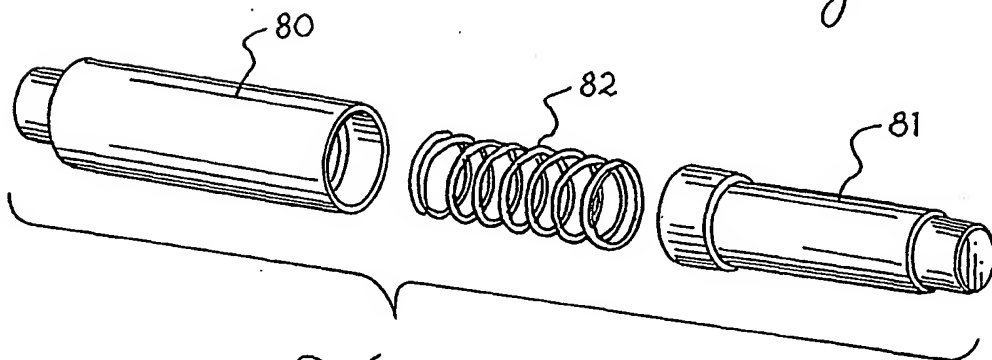
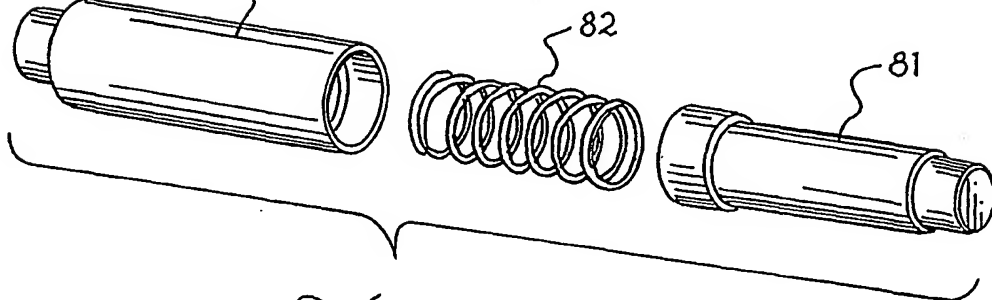
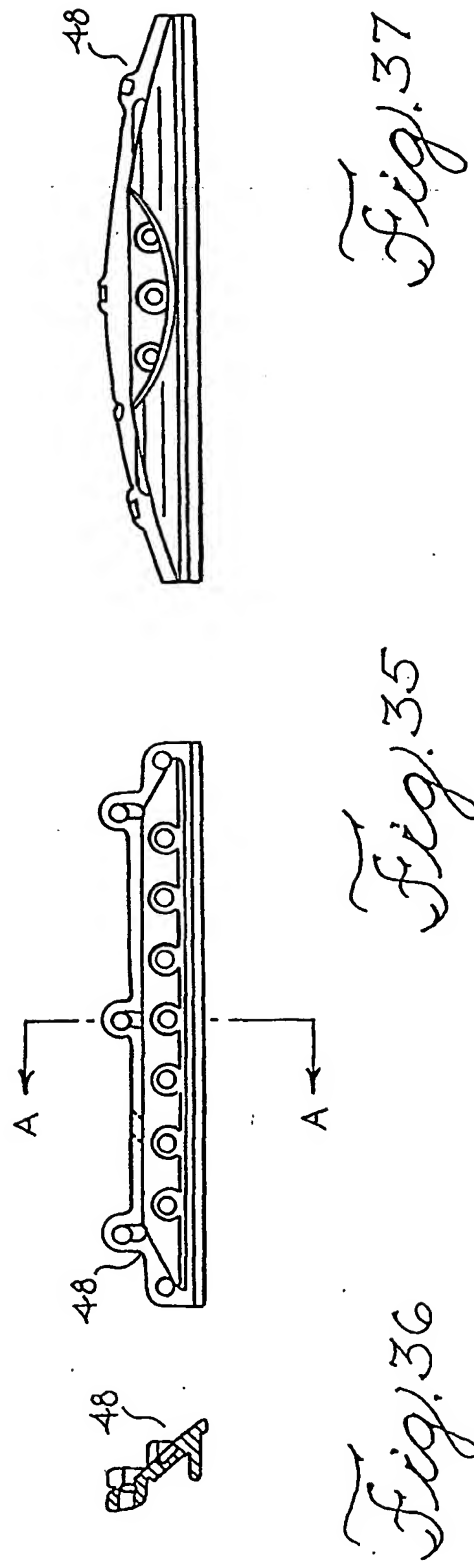
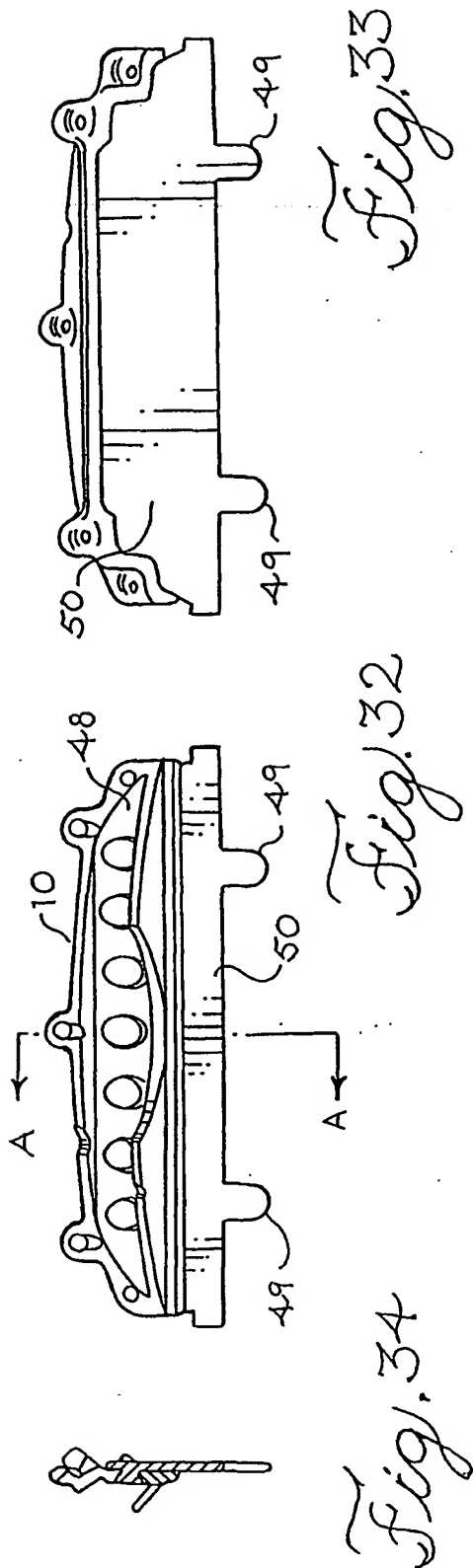


Fig. 41





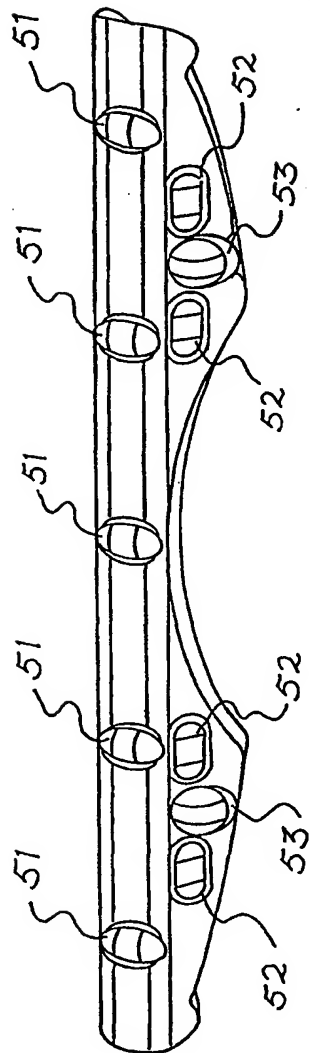


Fig. 38

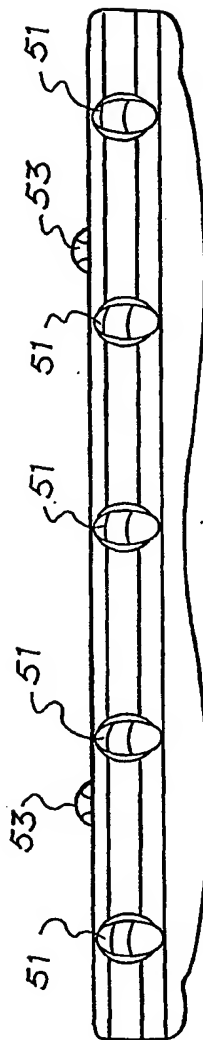


Fig. 39

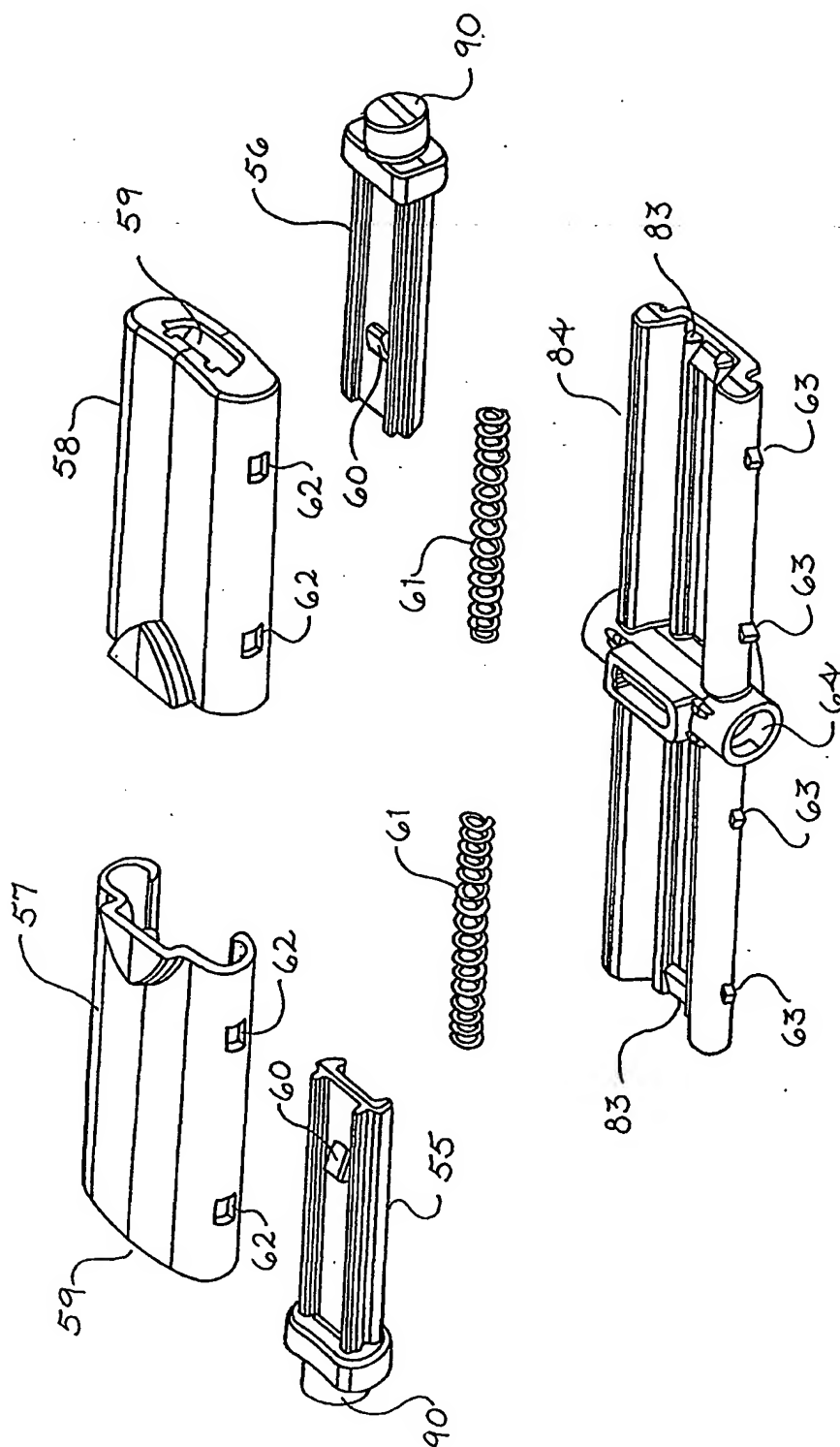


Fig. 43

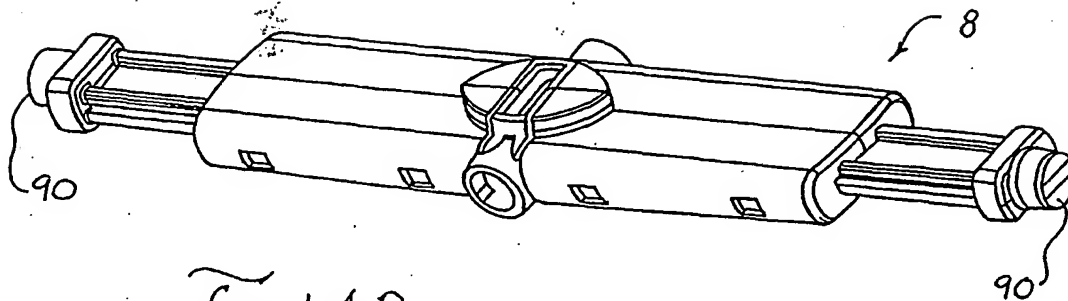


Fig. 42

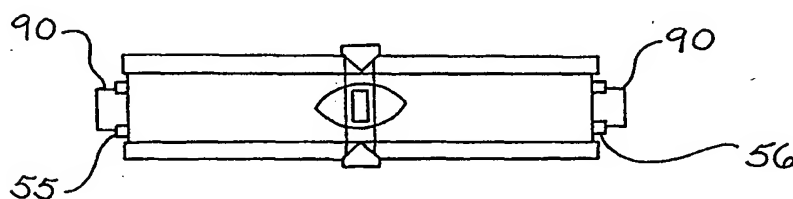


Fig. 44

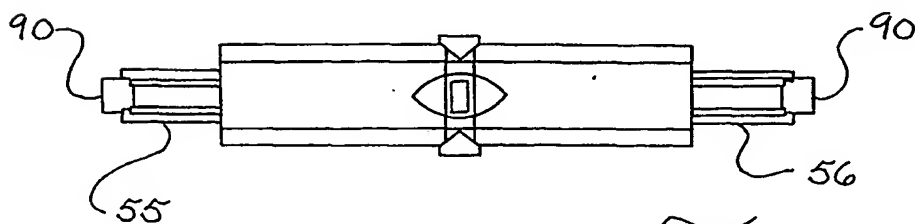


Fig. 45

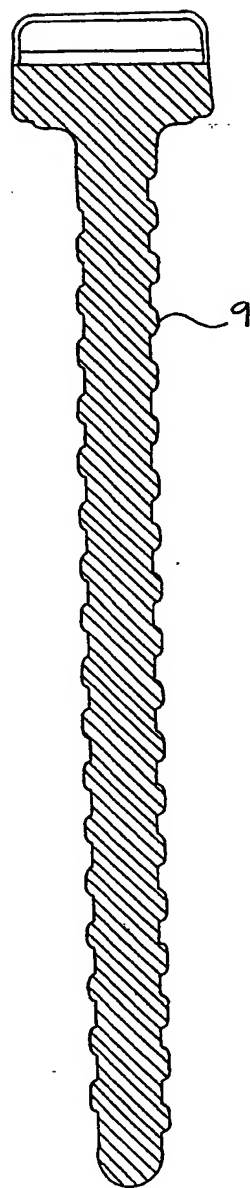


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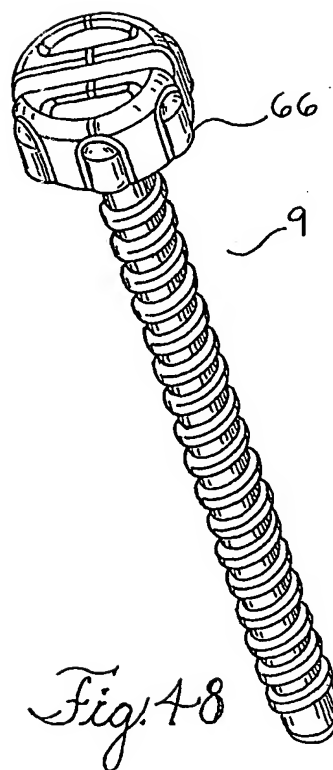
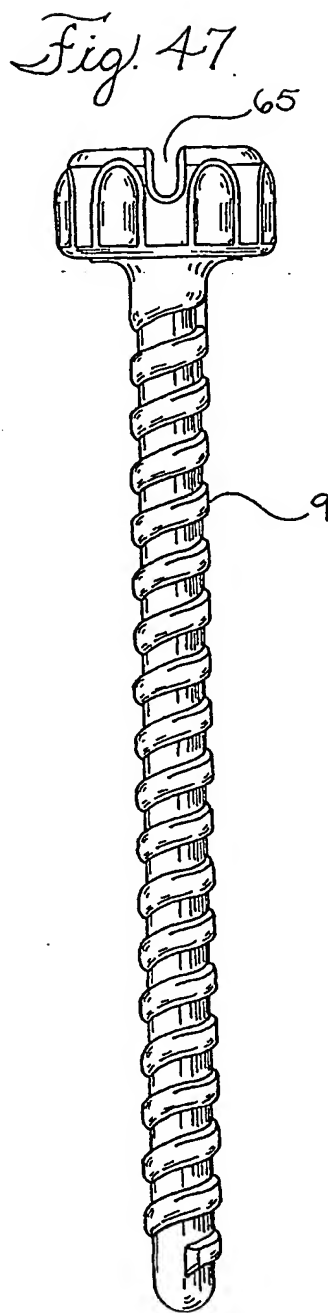


Fig. 48

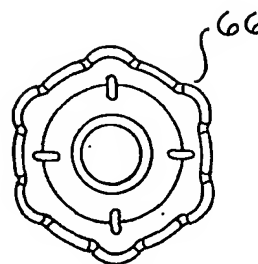


Fig. 49

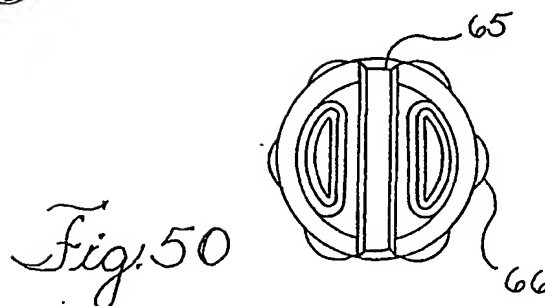


Fig. 50

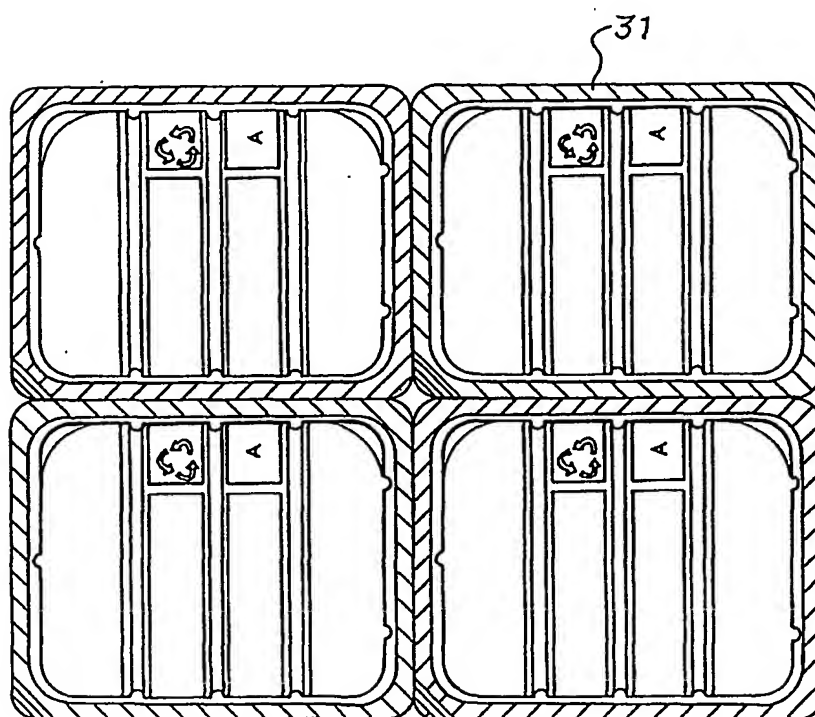
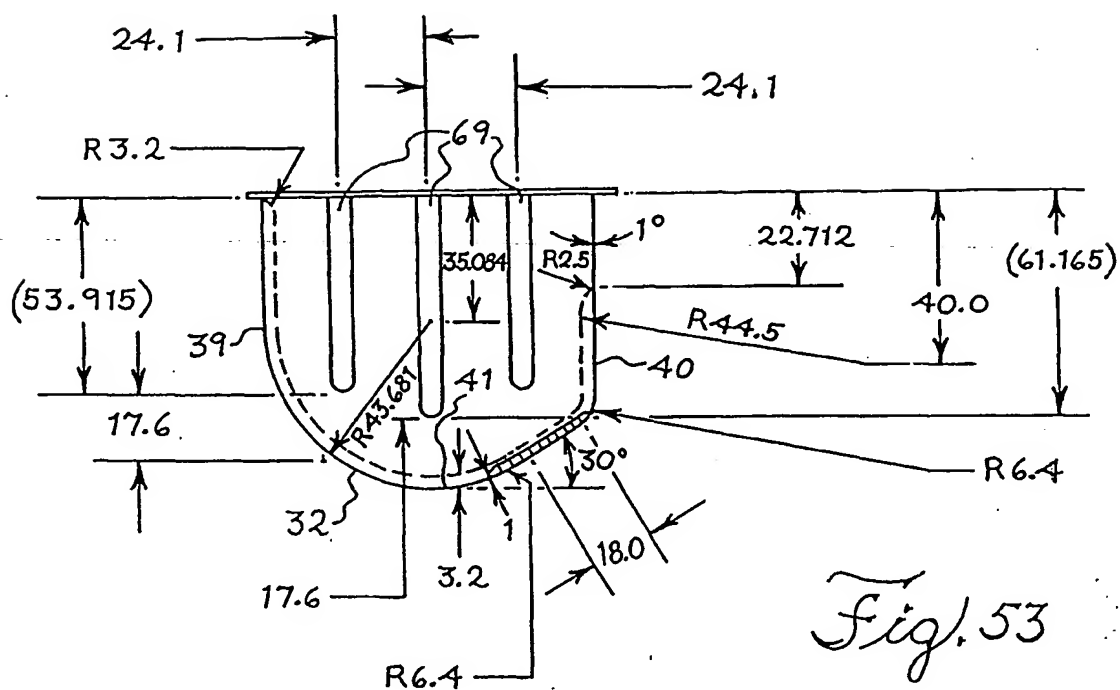


Fig. 54

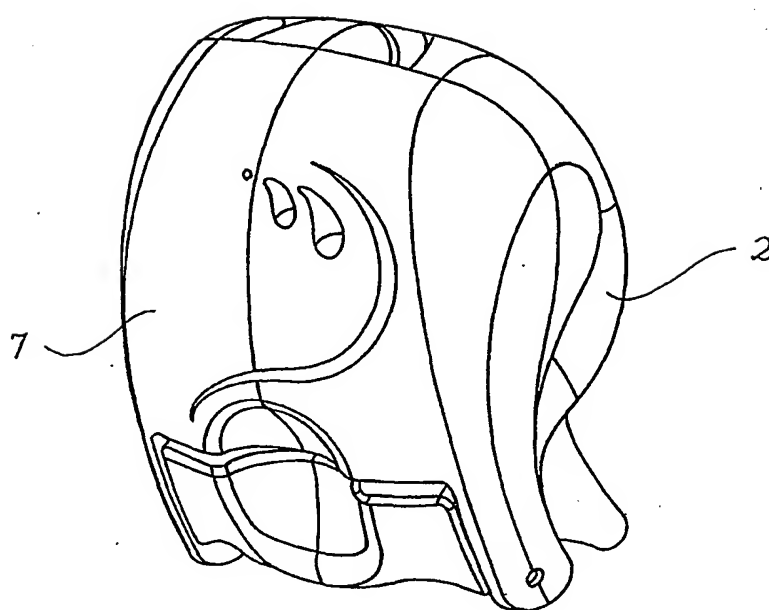
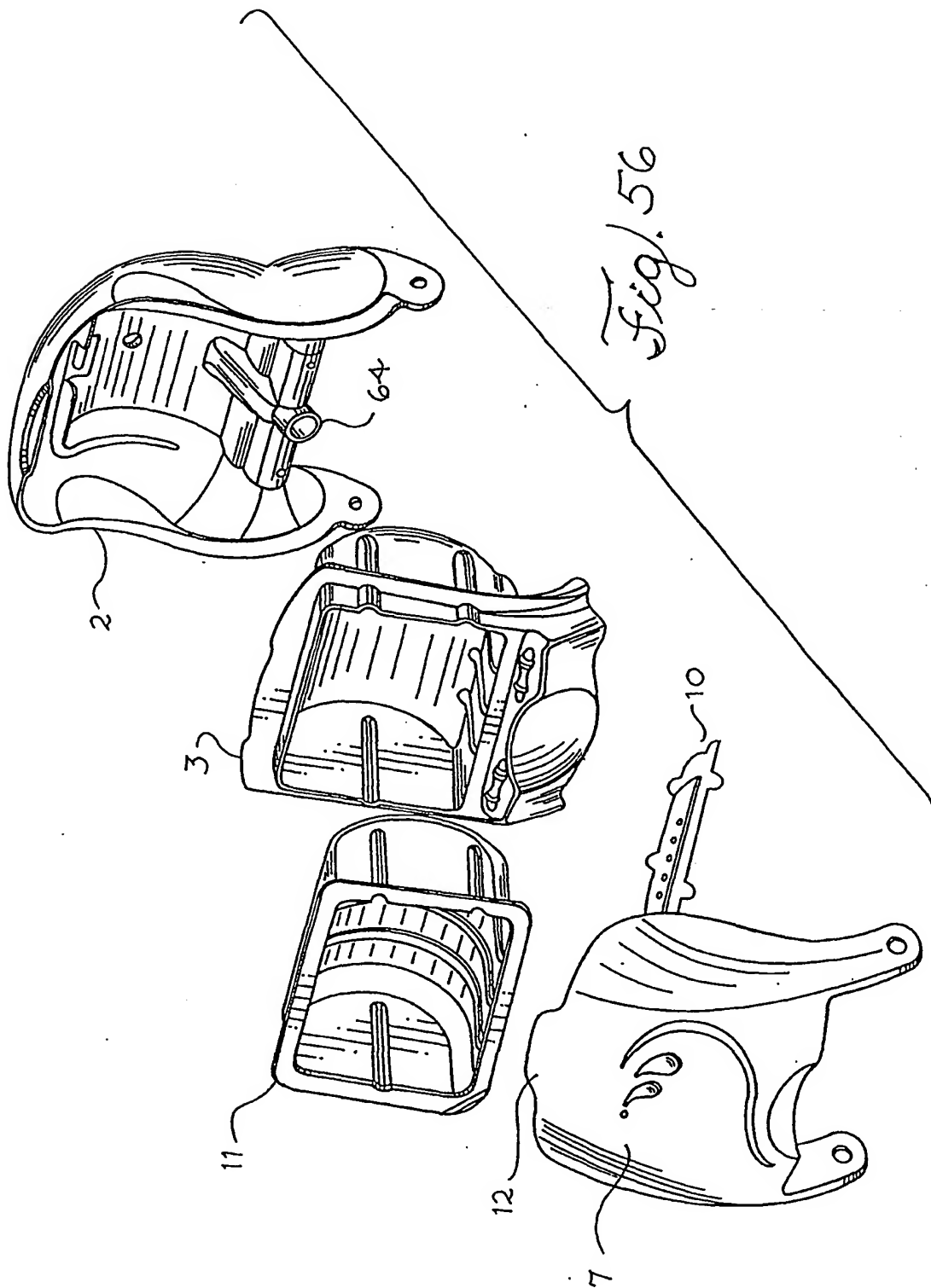
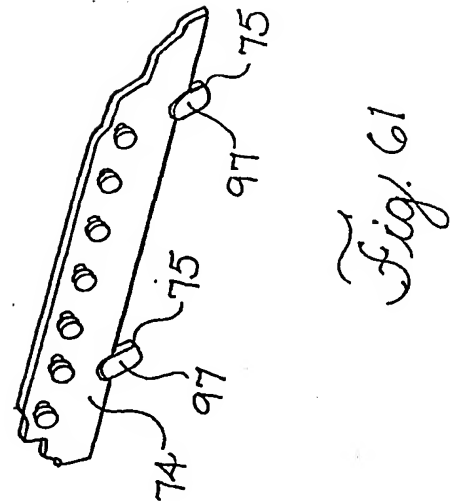
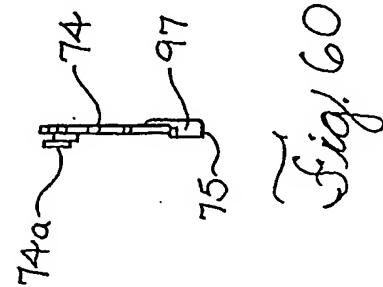
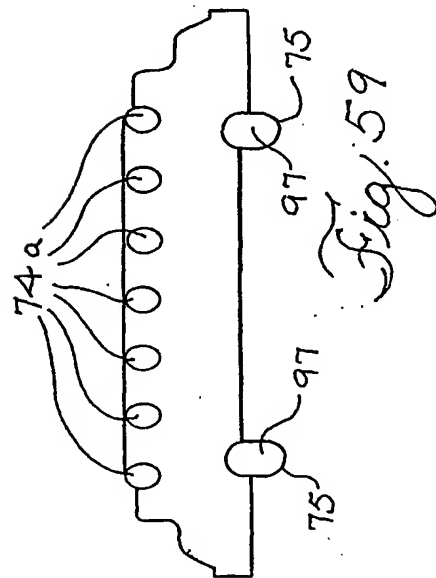
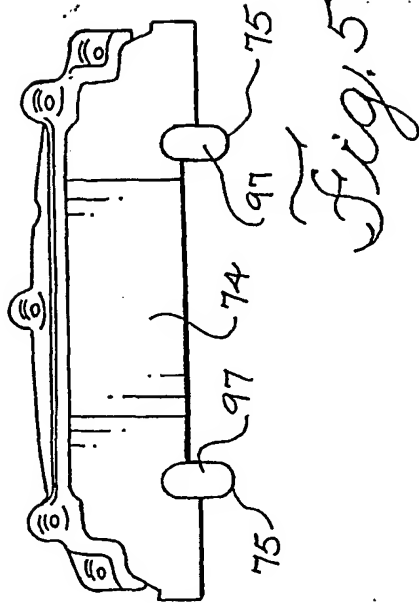
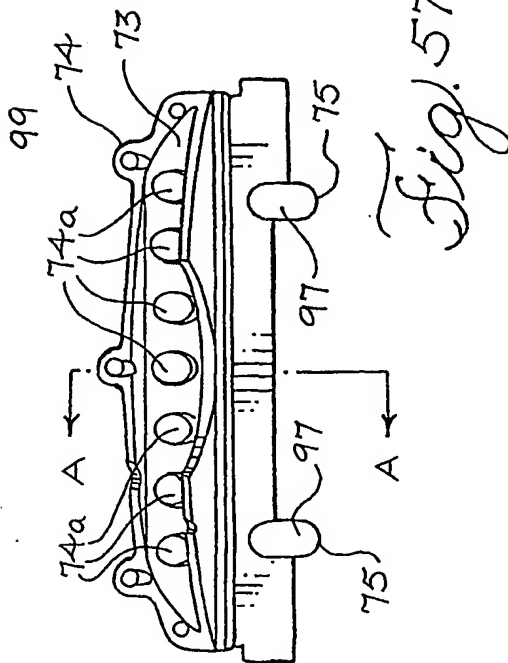
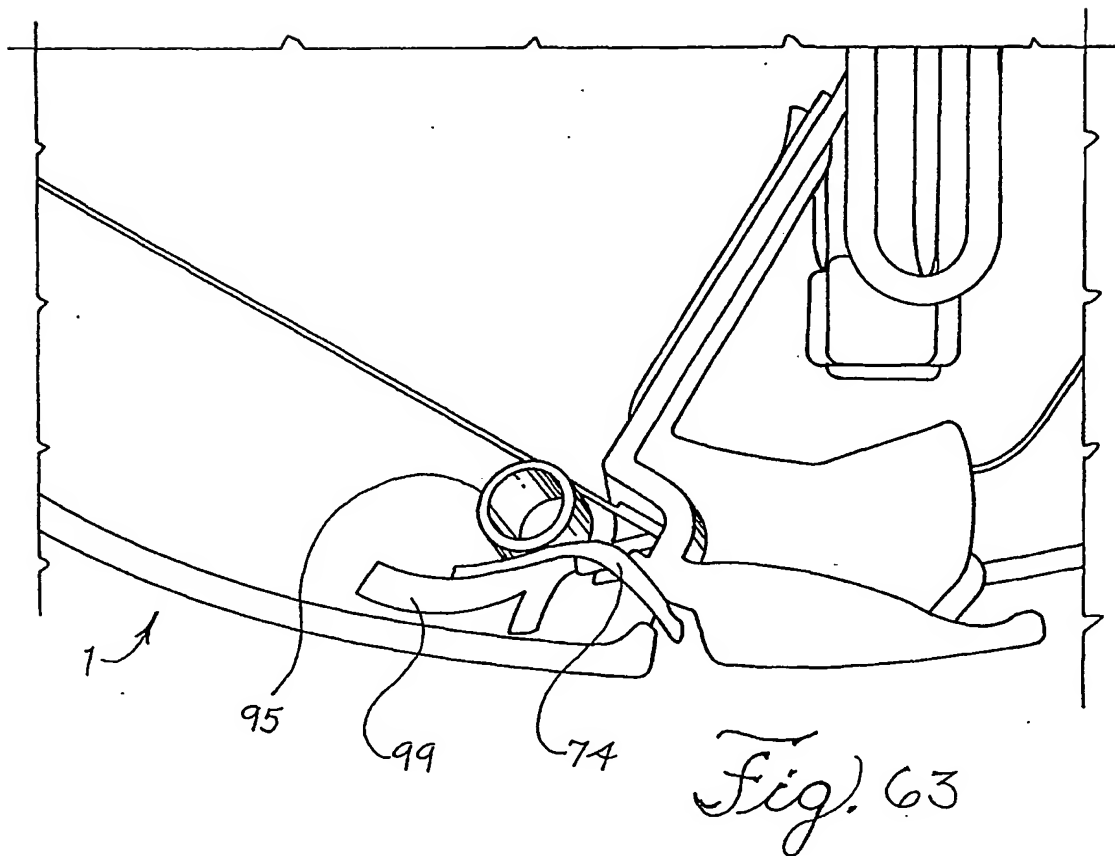
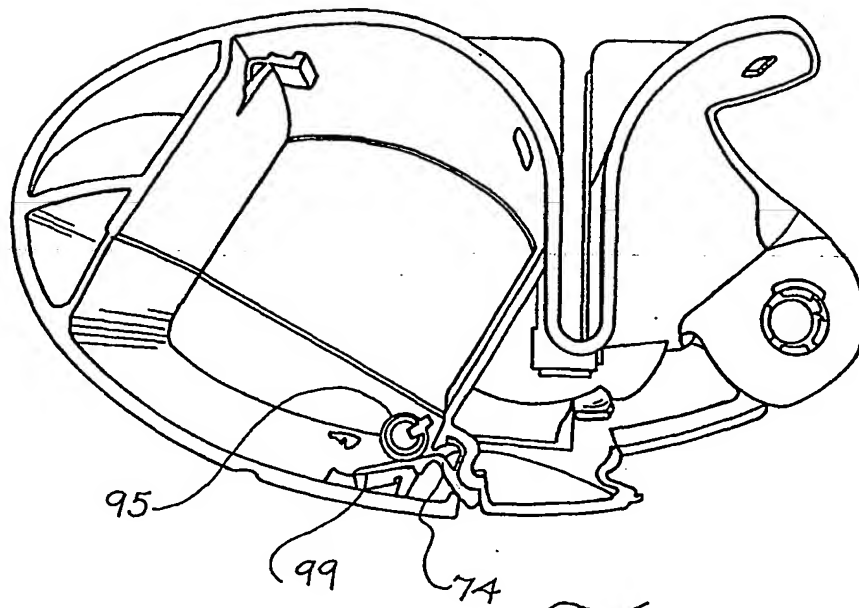
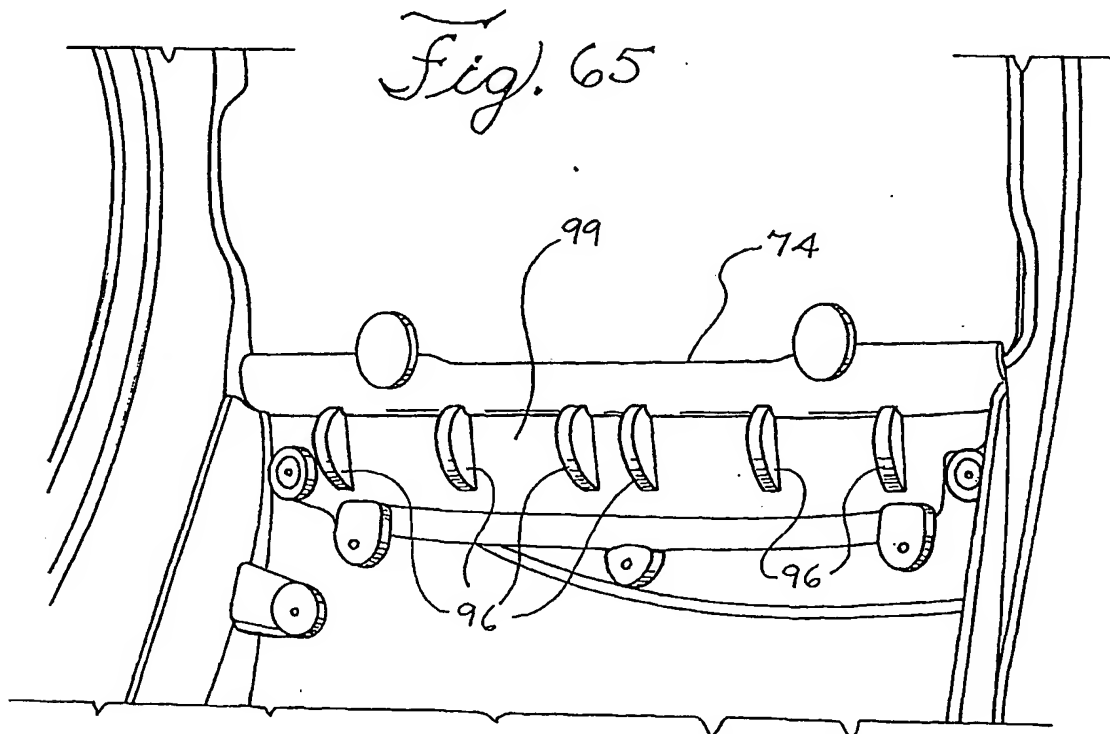
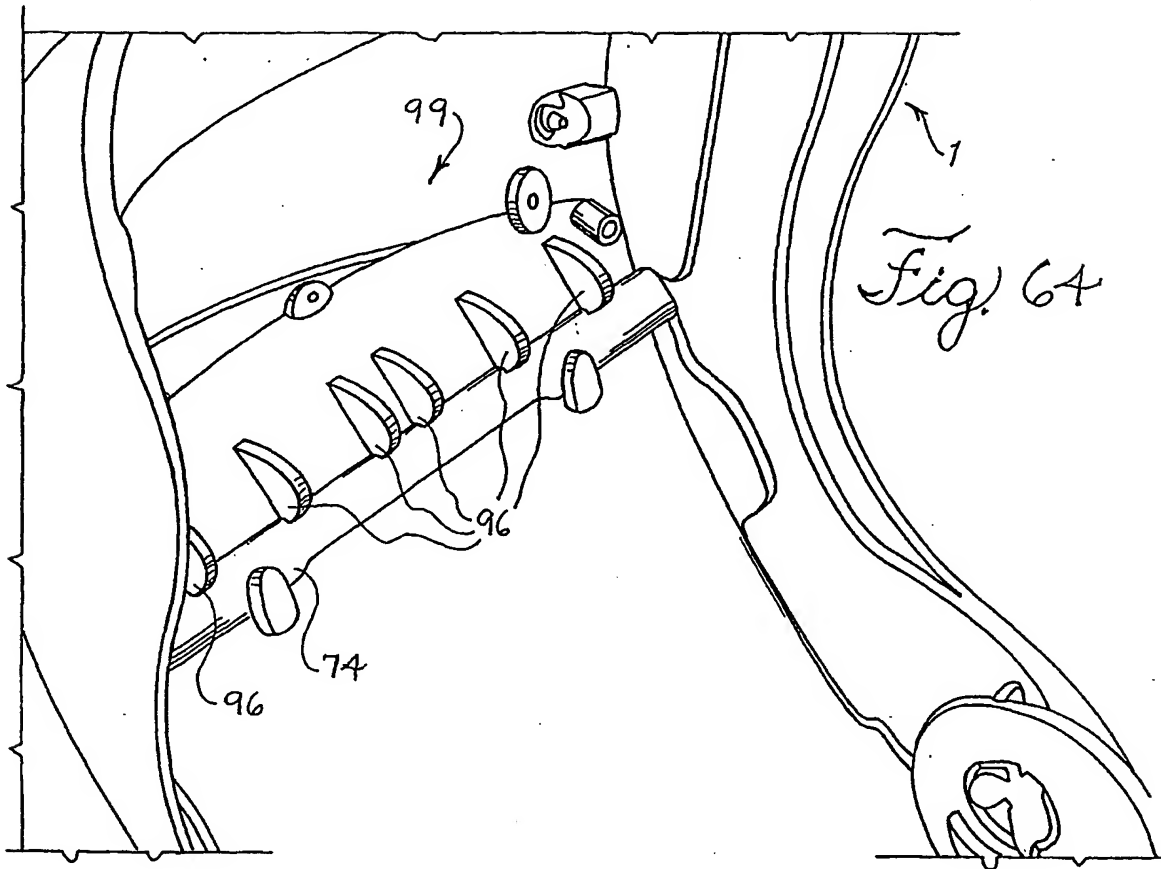


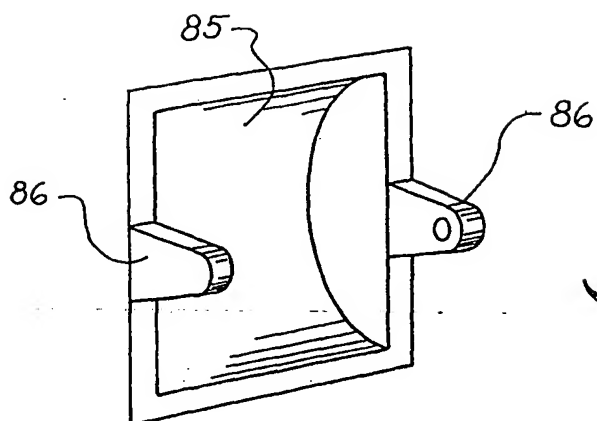
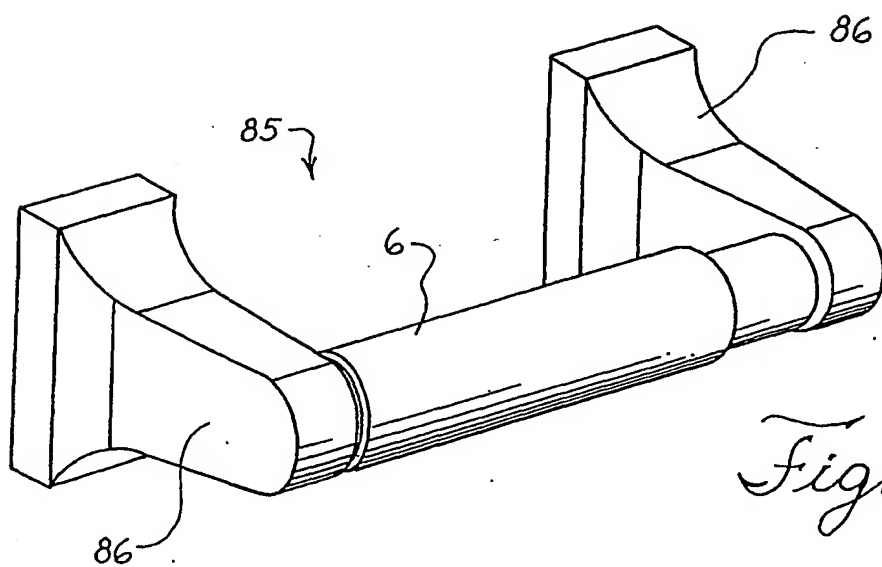
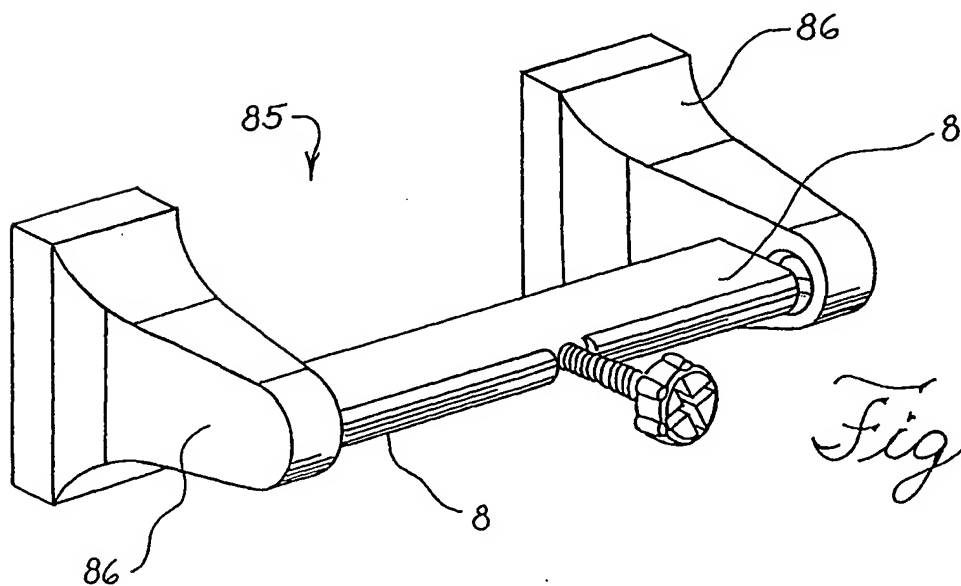
Fig. 55









*Fig. 66**Fig. 67**Fig. 68*

